GENDER BALANCE AT ALL LEVELS OF MANAGEMENT

Benchmark Information

The gender balance at all levels of management benchmark helps organizations assess and achieve gender equity at all levels of leadership. Achieving this benchmark calls for a range of actions to create inclusive workplaces. It requires business to address key barriers to women’s participation in the labour force and create an inclusive workplace where all employees are respected and empowered. In addition to recruitment targets, establishing gender balance goals for managerial positions greatly enhances overall gender balance metrics. While SDG 5.5 calls for women’s full and effective participation and equal opportunities for leadership, including in economic life, by 2030, companies are encouraged to set more ambitious timelines to achieve gender balance in management.

Business leaders increasingly report that gender equality is a priority, yet less than 30 per cent of companies have set time-bound, measurable goals and targets. By setting ambitious targets and taking action to achieve gender balance in business leadership, companies directly contribute to the achievement of Global Goal 5: Gender Equality.

Further, a growing body of evidence supports the link between greater gender diversity and improved environmental, social and governance (ESG) performance. For example, one study found that having more women in business leadership is associated with reduced greenhouse gas emissions, stronger worker relations and reduced incidence of fraud.

Among other things, in order to attract and retain top female talent, businesses must focus on pipeline development, hiring and promotion, adoption of inclusive workplace policies and performance reward structures, elimination of sexual harassment, and offering equal pay for work of equal value.

Illustrative Industry Impact

Industrial Goods & Services: According to the World Economic Forum (WEF), women’s representation in this sector is just 16 per cent. However, there has been a steady increase in the share of female talent — women now make up the majority of the college-educated workforce. Industry leaders must continue to work to make STEM careers more attractive to female talent and adopt more inclusive workforce cultures.

Technology: Today, just 26 per cent of the computing workforce and 11 per cent of global tech industry leadership is female. Adopting flexible work times, maintaining robust employee networks, and investing in personal development programs can create inclusive pathways to achieve gender balance in the technology sector.
Assessing Against the Benchmark

Performance on the benchmark — achieving gender balance at all levels of management by 2030 — can be assessed in line with the objectives of UN Women, Women’s Empowerment Principles and the Target Gender Equality Initiative. Research by the WEF indicates that at the current pace, it will take 257 years to address the economic gender gap. However, establishing clear goals for achieving gender balance at leadership positions can have a profound impact: having at least one woman in senior leadership increases the proportion of women rapidly advancing in organizations by 23 per cent. Business that have not established time-bound, measurable goals and targets for achieving gender balance at all levels of management would fall below the SDG Ambition Benchmark.

Business Value

Companies that strive towards gender balance report higher profitability. For example, achieving 30 per cent female representation in leadership has shown to increase profitability by 15 per cent. But other business value drivers make a compelling case for adopting this target as well. Visibly diverse workforces signal attractive workplace environments, which can translate to increased retention and leadership aspirations. Accenture research found that creating a culture of equality would help women feel that they are a key member of their team, increase their retention and inspire ambition in women to reach a leadership position. As consumers have clamored for better representation of women in leadership roles, brands face a high reputational risk and possible legal action if they do not prioritize gender balance and ensure non-discrimination. In the United States in 2019 alone, more than 25,000 gender discrimination complaints were lodged.

PRELIMINARY ACTIONS

Secure top level support for gender equality: For example, signing the CEO Statement of Support for the Women’s Empowerment Principles sends an important signal to your employees and other stakeholders that gender equality is a priority and can help establish buy-in from leaders across the organization to take action.

Performance analysis: Assess your company’s gender equality performance on a regular basis to take stock of progress towards women’s equal representation and leadership and identify potential barriers and opportunities to accelerate the pace of change. The WEPs Gender Gap Analysis Tool is a free, confidential, online and user-friendly diagnostic tool available at https://weps-gapanalysis.org/

KEY RESOURCES

- UNGC: Target Gender Equality
- WEP Gender Gap Analysis Tool
- World Economic Forum Gender Parity
Understanding Integration

Business integration of this benchmark means addressing the barriers and challenges to gender balance in management positions of the organization. Companies must create wholesale transparency over direct indicators of gender imbalance such as headcount, compensation and the recruitment pipeline. To drive meaningful action, businesses must design systems to track harder-to-measure barriers to balance, such as unconscious bias and structural inequality. It is important to acknowledge that AI and other technologies can unintentionally reinforce biases, making strategic decision-making with regards to integration essential.

Illustrations of Integration

FLEXIBLE WORKING ARRANGEMENTS
Going beyond policy creation and offering benefits, companies need to measure uptake of flexible work plans and the culture change around them, such as existing stigmas against men taking parental leave. Research highlights that only 34 per cent of organizations train managers to support employees to utilize flexible work arrangements, meaning many still lack the confidence to use them. Companies can use systems to track uptake and perception of these policies to drive increased adoption and usage of these offerings in light of the significant impact they can have on gender balance for a business.

Interview Panels
Efforts to recruit more women can be impaired by existing structures of bias such as majority male interview panels. Systems have the capacity to diversify interviewers through automated selection and analysis of the employees selected by those individuals, which can have a large impact on recruitment balance. At Cisco, for example, diverse interview panels increased the odds of making it through the interview process by 50 per cent for Hispanic women and 70 per cent for African-American women.

C-Suite Ownership
Chief Human Resources Officer

Journey towards Integration

Leading Human Resources (HR) systems and tools on the market today have the capabilities to integrate this benchmark into core business. By pairing new processes with specific functional design and activation (e.g. learning and recruiting) companies can enhance their monitoring of challenge areas and drive action towards gender balance. Business leaders should engage their technology partners to pursue integration goals, such as:

Real-time transparency
Creating a full and accessible view of gender diversity and equality based on real-time data.

Prediction and management of biases
Ensuring that data science and analytics identify sources of bias and track indicators, enabling real-time adjustments.

Impact measurement and continuous improvement
Tracking success of initiatives and identifying opportunity areas to further drive workforce gender balance.

58% Only 58 per cent of organizations in the U.S. track hires, promotions and exits by gender.

42% Only 42 per cent of workers in Europe make use of flexible working offerings.

*See more in SDG Ambition Integration Guide chapter on Preparing for Integration

Gender Balance at All Levels of Management
SDG AMBITION APPROACH
Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

RAISING AMBITION
IDENTIFY RELEVANT BENCHMARKS BASED ON PRIORITIES
NEW GOAL IN LINE WITH BENCHMARK’S LEVEL OF AMBITION

WORKFORCE EQUALIZATION
Analysis of existing compensation structures and packages, and executing equal pay for equal work
Mandate equal pay for equal work by creating a dedicated corporate policy
Conduct annual compensation and opportunity review and accredited audit
Establish reporting/remediation processes for breach of protocols
Eliminate gender pay gap

RETENTION & PROGRESSION
Focused talent management efforts to retain and reward employees without discrimination or bias
Implement policies that address systemic barriers to inclusion (e.g., flexible work plans)
Deliver employee training on inclusion and gender equality, from leadership down
Create initiatives encouraging progression (e.g., leadership programs)
Increase headcount gender diversity by level and function

RECRUITMENT
Increase gender equal pipeline through strategic recruitment campaigns, application and interview decision making
Implement requirements for gender diversity in candidate pools and interview panels
Invest in pipeline development and training to increase female talent pool especially in certain fields such as STEM
Increase in recruitment balance

HUMAN RESOURCES
TIME & EXPENSES (T&E)
TRAINING & DEVELOPMENT
CORPORATE CITIZENSHIP
MARKETING

INTEGRATING AND VISUALIZING HOLISTIC COMPENSATION GAP
Employee compensation data (e.g., salary, bonuses, benefits) likely to be fragmented across different systems. HR software solutions can pull into cohesive data set.

CHALLENGING BIASES IN TALENT MANAGEMENT & STRUCTURE
New processes and analytics tools to track possible sources of bias (e.g., review panels, uptake of flexible work plans), and leveraging learning systems to gain visibility over employee decisions and possible progress

TARGETING RECRUITMENT ACTIVITIES FOR BALANCE
“Recruiting” functionality in core HR systems enable businesses to track data related to recruitment efforts, including community engagement (external training, marketing) to monitor impact of activities

KDD1
How might you create a holistic and real-time view of employee compensation?
The definition of the applicable data structures and the right level of details will provide the ability to understand employee total benefits (not just salary) and identify if compensation and leadership gaps exist.

KDD2
How might you automate the assessment of bias across the business?
Creation of processes and systems to track activities in areas where biases exist (e.g., gender balance on panels, employee engagement with unconscious bias training) to inform impactful decision making and adjustments to current initiatives.

KDD3
How might you optimize recruitment efforts to increase pipeline diversity?
Building systems to identify and optimize recruitment activities for increasing female applicants. This includes appropriate mapping of recruitment initiatives, like career events, to ensure impactful employee engagement tracked in the system.

All KPIs and metrics listed are directional, drawing on existing reporting standards. Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.
### BUSINESS SYSTEMS DESIGN

**How might you create a holistic and real-time view of employee compensation?**

Tracking gender balance requires multiple metrics, with the necessary data points often found across different business systems. Headcount data (turnover; promotion) is likely to be held on central HR systems, whilst compensation data (salaries; bonuses; benefits) can be siloed on payroll or time and expense platforms.

Enterprise software tools embedded with analytics capabilities can enable companies to intelligently combine data sets to gain a more real-time, granular view of employee data and visualize them in accessible dashboards.

**How might you automate the assessment and management of bias across the business?**

Many barriers to gender balance in an organization are cultural and structural, and therefore won’t be highlighted by traditional HR indicators. These include unconscious bias in talent management and job descriptions, differing standards and expectations in work patterns and parental leave, and alienating workplace cultures.

Companies and platform providers can identify and address such barriers through machine learning. AI powered tools can identify biases in language of job postings and performance management and suggest alternatives.21

Intermediary process steps can be taken among smaller businesses such tracking interviewer diversity and employee engagement in unconscious bias training.

**How might you optimize recruitment efforts to increase pipeline diversity?**

Pursuing gender balance demands investments in recruitment and pipeline development, ranging from skill development (e.g. women’s initiatives) to targeting specific applicant pools (e.g. on-campus associations). Just like any business initiative, the impact of these activities can be measured. Blizzard Entertainment, the video game publisher behind World of Warcraft, was able to increase its number of female interns by 166 per cent by reaching out to on-campus women-led groups such as the “Women in Computer Science” club.22

Businesses can leverage recruiting modules in their core HR systems to focus outreach in these ways and track impact, as well as additional key indicators such as the gender balance of employee representatives at career events. Companies should work with their technology partners to design intelligent systems that can identify opportunities such as women-led groups and assess their potential return on investment through driving greater gender balance.

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## NET-POSITIVE WATER IMPACT IN WATER-STRESSED BASINS

### Benchmark Information

Adopting this benchmark helps business assess their water use and deliver net-positive water impact, especially in high water-stressed areas, defined by WRI as an area where 40 per cent or more available supply of water is withdrawn each year. This SDG Ambition Benchmark provides business with the strategic insights and technical know-how to assess their freshwater impact across its availability, quality and accessibility. It advocates for businesses to move beyond operational to measurable improvements of watersheds in proportion to their local water use and economic impact in support of Goal 6: Clean Water and Sanitation. Companies must set targets for direct operations water use in the short term, supporting a pathway to 50 per cent fulfillment by 2030 and 100 per cent fulfillment of net-positive water by 2050.

### Assessing Against the Benchmark

Performance on the benchmark — sustainable withdrawals and supply of freshwater by 2030 — can be assessed in line with the United Nations SDG 6, “Clean Water & Sanitation”. The UN Global Compact CEO Mandate and the Water Resilience Coalition further advocates for business to achieve net-positive water impact and water resilient value chains by 2050. As nearly two thirds of global freshwater consumption is associated with ingredient production for corporate supply chains, companies must extend responsibility for water consumption across the value chain. Businesses that have not established goals in line with achieving net-positive water operations in water-stressed basins by 2050 as outlined above would fall below the SDG Ambition Benchmark.

### BUSINESS IMPACT ON WATER

Business is the largest user of water as nearly all operations and supply chains rely on access to water. 45 percent of companies report exposure to risks from water insecurity estimated at over US$ 425 billion. More than 175 companies endorse the CEO Water Mandate to address global water challenges through corporate water stewardship, in partnership with the UN, governments, civil society organizations and other stakeholders. The Mandate’s Water Resilience Coalition is an industry-led initiative focused on ambitious commitments and collective action.

### ILLUSTRATIVE INDUSTRY IMPACT

- **Agriculture**: 70 percent of global water use is attributed to agriculture. The agricultural inputs required to produce beverages and food can add up to hundreds of gallons of water for each unit of food or beverage produced. Improving agricultural efficiency in water-stressed regions is key to ensuring a continued water supply.
- **Oil & Gas**: 10 percent of global water use is industrial. In the oil and gas industry, water is used during extraction and hydraulic fracturing. Concerningly, some of the most water-stressed regions in the world are also major producers of oil and gas. Industry leaders must actively manage their water risks to ensure continued production.
Business Value

Companies can reduce costs by conducting water-risk assessments and subsequently reducing water usage. One global beverage company saw savings of USD $300M over five years following a risk assessment. Additionally, companies can further save costs and reduce risks by investing in wastewater treatment and re-using water in direct operations or within their ecosystem. These risks can also be mitigated by creating regional partnerships and investing in basin health initiatives. One consumer goods company implemented an intelligent water management plan in Colombia, which led to the construction of 10 water re-use systems, enabled 160 sites for reforestation and initiated 27 local community participation groups that train farmers on climate resilience across 25 river basins.

Preliminary Actions

Adopt standardized measurements and definitions: Companies use various definitions and scoping boundaries to report water use and wastewater information, making comparison and benchmarking data difficult.

Incorporate water stewardship into materiality assessments: Assessing the risks, opportunities and impacts associated with water across your facilities and suppliers to inform strategies.

Key Resources

- CEO Water Mandate
- AQUASTAT
- Aqueduct Alliance
- Pacific Institute
- International Institute for Sustainable Development

Companies Taking Action

NOVARTIS
set a 50 per cent water reduction goal by 2025 vs. 2016 levels, moving towards water neutrality in all operations by 2030. They have also pledged to enhance water quality in all areas where they operate.

LEVI STRAUSS & CO
committed to reducing water use in manufacturing by 50 per cent by 2025 in areas of water stress against a 2018 baseline. Their “Water<Less” supplier targets will be applied to all suppliers, responsible for 80 per cent of LS&Co.’s production, via facility-level targets that address local water stress.

INTEL
is moving beyond their 2025 target of 100 per cent water restoration, setting a new 2030 goal to increase their water conservation and achieve net-positive water use. This plan includes funding external water restoration projects.
NET-POSITIVE WATER IMPACT IN WATER-STRESSED BASINS

BUSINESS INTEGRATION

RAISING AMBITION

INTEGRATION COMPLEXITY*

Understanding Integration

Progress towards a net-positive water impact demands advanced monitoring and management of water as a resource for the business, partners and communities. Pursuing operational efficiencies to abstract less, but also identifying opportunities to protect access and quality wherever the business impacts water sources, relies on data-driven insights. Advancements in technologies that enable real-time data flows, such as the internet of things (IoT), artificial intelligence (AI) and geospatial mapping, can help businesses address their water impact, whilst increasing profitability. Streamlining water quality monitoring through smart water technologies can save a standard utility company up to US $600 million annually, or 70 per cent of quality monitoring costs.12

Illustrations of Integration

LEAKS

Pairing sensors in water pipelines with real-time management tools such as variable speed drives (to control pressure), businesses can automate pressure reduction and drive down water loss from leakages dramatically. A reduction in pressure of just 20 per cent can reduce leakage by 30 per cent.13

WATER-STRESS & RISK

Mapping areas of water-risk and local water challenges supports effective prioritization of water stewardship and access initiatives. Tyson Foods uses Aqueduct, an open source tool from The World Resources Institute. The company uses this tool to input data into their facility prioritization process, which determines the level of need for site water stewardship plans and targets. This data also lays the foundation for engaging outside the company’s walls as they respond to shared water challenges in the watersheds where Tyson Foods operates and sources.14

* See more in SDG Ambition Integration Guide chapter on Preparing for Integration

C-SUITE OWNERSHIP

Chief Operations Officer

Journey towards Integration

Companies should assess their ability to integrate digital technologies and smart solutions into water management strategies and systems. Engaging with technology partners and third-party service providers, businesses can achieve:

Automation of measurement and predictive action

Leveraging digital tools for automatic monitoring of water usage and impacts, moving towards real-time adjustments and action, such as changing pipe pressure or alerting repair teams to prevent leaks.

Optimization of water-efficiency and maintenance of quality

Keeping water in use, either in operations, or through restoring quality after use for return to local water sources.

Forecasting for targeted action

Collection of accurate operational and geographical water data to inform risk assessments and modelling regarding prioritization and capital allocation.

$14B

The World Bank estimates the cost to utilities of water lost before reaching the consumer at approximately $14 billion per annum

$25.6B

The smart water management market is expected to reach $25.6 billion by 2025
**SDG AMBITION APPROACH**

Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

### RAISING AMBITION

**IDENTIFY RELEVANT BENCHMARKS BASED ON PRIORITIES**

<table>
<thead>
<tr>
<th>New Goal in Line with Benchmark’s Level of Ambition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WATER QUANTITY</strong></td>
</tr>
<tr>
<td>Reduce the amount of water required for business activities, increasing re-use, recycling, and efficiency.</td>
</tr>
</tbody>
</table>

**Fundamental:** Water use by source (freshwater vs. other); Water use in stressed regions; Suppliers recycling rate

**Aspirational:** Water use per unit of production; Water loss by cause; Supplier water use & policies

**KDD1**

How might smart management technology be best integrated into water management systems? Define most efficient water flow and the process for implementing and managing smart systems and process the resulting data.

**KDD2**

How might you facilitate supplier assessment and encourage improvement? Identify tools to support integration of supplier water data as well as share water sustainability practices/incentivize improvement.

**KDD3**

How might you streamline data flows between service providers and core systems of water management? Data flows can include water quality analysis, volume and cost of recycled water to identify opportunities for improving efficiency of water use and recycling.

**KDD4**

How might you build an aggregate picture of local water challenges and opportunities? Use of geospatial tools to develop maps of water-stressed areas and overlay footprint of internal and supplier operations.

### BUSINESS INTEGRATION

#### NET-POSITIVE WATER IMPACT IN WATER-STRESSED BASINS

- All KPIs and metrics listed are directional, drawing on existing reporting standards.
- Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.
How might smart management technology be best integrated into water management systems?

Smart water management solutions can be used to monitor conditions and detect anomalies across water abstraction and consumption, such as a drop in pipeline pressure due to a leak or the detection of contaminants or bacteria in the water. Designing systems to monitor this data and react in real time can significantly help reduce water loss or prevent discharge of contaminated water into the environment.

These solutions rely on digital technologies such as sensors and IoT. For business to capitalize on them, they must design core systems for new processes of data collection and storage for the increased volumes of data. Analytics and artificial intelligence-enabled tools can then be used to maximize impact by producing actionable insights and ultimately moving towards prediction and automated action.

How might you facilitate supplier assessment and encourage improvement in supplier water practices?

New supply chain management tools enable more agile interaction with suppliers to ease the burden of assessment, as well as enabling companies to share best practices with their suppliers.

For example, Nestle worked with Institute of Water Informatics at LUMS University, Pakistan, to develop a cost-effective smart sensor for farmers in their supply chain. To complement the device, they created a free shareable software program which provides farmers with real-time irrigation updates, straight to their smart devices.

How might you streamline data flows between service providers and core systems of water management?

Companies may rely on service providers for the management of activities such as water recycling and treatment. Creating data flows between internal processes and service providers is important for both reporting and decision making.

Integrating water data with these external water management partners provides insights into the volume of water being treated, contaminants present prior to treatment, as well as water volume and quality post treatment. This information can help identify opportunities for water reuse across operations, but also highlight opportunities to change production processes or product design to reduce or eliminate contaminant byproducts.

How might you build an aggregate picture of local water challenges and opportunities?

The use of mapping technologies, paired with your own water use data, can help identify areas in which operations have an outsized impact on local water availability (e.g. in water-stressed basins) and allow you to prioritize targeted reduction and replenishment efforts.

Similarly, understanding where your suppliers operate can drive your supplier management strategy, such as having an increased audit frequency for suppliers operating in water-stressed regions.
100% of employees across the organization earn a living wage

**Benchmark Information**

This benchmark calls businesses to pay all their employees — regardless of their employment status — a living wage. This is defined as: “the remuneration received for a standard workweek by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his dependents. Elements of a decent standard of living include food, water, housing, education, health care, transportation, clothing, and other essential needs including provision for unexpected events”.

Achieving this target requires that companies develop and incorporate different elements of a fair compensation policy. All departments in the company should get involved to ensure consistency in the implementation of the strategy.

Living wage underpins several of the Sustainable Development Goals (SDGs), in particular Goal 1 “End poverty in all its forms everywhere” and Goal 8 “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”. Wages are among the most important conditions of work and a major subject of collective bargaining.

Governments have an important role to play in wage fixing and supporting wage-fixing mechanisms at a sectoral level. More than 170 countries have one or more minimum wages set through legislation or binding collective agreements. In many countries however, companies must go beyond existing legislation on wages because minimum wages do not always allow for a decent living. Businesses can ensure that all their employees, regardless of their contractual arrangements, have the income to support their needs and those of their dependents, raising standards of health and well-being. Companies should strive to achieve this benchmark by 2030 in line with the 2030 Agenda.

The scope of this ambition comprises employees and contractors in direct employ of the business. However, the ambition should be progressively extended to a fair compensation commitment for all workers in the entire supply chain of a company. This will require companies to adopt or improve their procurement practices, and engage with relevant stakeholders, including industry peers, suppliers, governments, workers’ organizations, international organizations, investors, and civil society organizations. Anchoring the work at the local level will be crucial for success.

**BUSINESS IMPACT ON LIVING WAGE**

More than 6,000 employers in the UK have been accredited and certified by the Living Wage Foundation for paying a living wage. These leading employers and service providers publicly join the independent movement of organizations, businesses and people campaigning for a wage that is sufficient to live on and also offers accreditation for the same.

**ACT (Action, Collaboration, Transformation)**

is a ground-breaking agreement between global brands, retailers and trade unions to transform the garment, textile and footwear industry and achieve living wages for workers through collective bargaining at the industry level linked to purchasing practices. ACT is a collaboration of 20 global companies representing a broad range of brands and labels and IndustriALL Global Union representing garment, textile and footwear workers from around the globe.

19% of all workers worldwide do not earn enough to escape poverty.
-3.7% decrease in normal weekly wages in the US among workers in the lowest earnings decile since 2000.
19% of UN Global Compact respondents are working towards living wages across their operations.
COMPANIES TAKING ACTION

INDITEX
is committed to facilitating the provision of a living wage to factory workers in its supply chain. In 2019, the company launched its “Workers at the Center 2019–2022” Strategy. It is based on the premise of understanding and responding to the needs of supply chain workers, their families and the communities where they live to promote decent work and sustainable productive environments.

Living wage is one of the priority impact areas identified within this strategy and it is developed across four lines of work:
• Promoting and facilitating collective bargaining
• Effectively implementing responsible purchasing practices
• Enhancing the production of organization systems and methods
• Improving management systems and wage digitization

Inditex is an active member of ACT (Action, Collaboration, Transformation) on Living Wages.

L’ORÉAL
In 2020, L’ORÉAL Group made two commitments regarding living wages:
1) In its Employee Human Rights Policy, L’ORÉAL commits to pay all its employees at least a living wage covering their basic needs and calculated in line with best practices, as soon as possible.
2) In the L’ORÉAL for the Future program, L’ORÉAL commits to having 100 per cent of its strategic suppliers’ employees being paid at least a living wage covering their basic needs and those of their dependents, calculated in line with best practices, by 2030.

L’ORÉAL developed partnerships with experts, including the Fair Wage Network, an independent organization that provides a comprehensive and updated database that is used to define, build and deploy a living wage strategy.

L’ORÉAL takes into consideration various factors such as the local fertility rate and the average number of incomes per household to calculate the living wage.

The living wage strategy complements the L’ORÉAL “Share & Care” existing programs that provide employees worldwide with a set of social benefits, including maternity and paternity leave, access to reimbursed medical treatments, disability insurance.

L’ORÉAL plans to engage their strategic suppliers as part of their “extended company” to implement a living wage for their employees as for other pillars of their sustainable sourcing strategy (social audits, environment, inclusive sourcing).

The implementation of a living wage strategy worldwide is a challenge, and L’ORÉAL is using its leverage to embark other companies and stakeholders in this journey, including through collaborative platforms such as the Business For Inclusive Growth (B4IG).

SCHNEIDER ELECTRIC
In line with its Human Rights Policy and Principles of Responsibility, Schneider Electric believes earning a decent wage is a basic human right. Schneider is committed to paying employees in the lower salary ranges at or above the living wage to meet their families’ basic needs. By basic needs, the Group considers food, housing, sanitation, education, healthcare plus discretionary income for a given local standard of living.

In 2018, Schneider started working with an independent advisor — Business for Social Responsibility (BSR) — to implement a living wage commitment. Schneider Electric has initiated a global process to analyze wage levels and employment practices against local living wage standards set by BSR. To date the analysis has covered 63 countries, reaching 99 per cent of the Schneider footprint. This partnership and process will continue and will progressively extend its scope to the Schneider supplier network.

UNILEVER
set the target in 2014 of creating a structured way to define and assess how the elements of their compensation packages deliver compensation to all employees which is open, fair, consistent and explainable. By the end of 2019, Unilever was paying at or above the living wage in most places and actively working through a small number of remaining issues in areas with complex pay arrangements.

The result was a Framework for Fair Compensation and a commitment to paying a living wage that gives their employees enough to “provide for their dependents’ basic needs, for food, housing, education and healthcare as well as some discretionary income”.

Since 2015, Unilever has worked closely with the Fair Wage Network as an objective external source of the living wage value for each of the countries with employees. Unilever uses these thresholds to assess whether the fixed compensation paid to all full-time direct employees (including factory and non-factory employees) in each country is meeting the living wage standard.

Unilever also promotes fair wages through the value chain by embedding fair wage assessments into their Responsible Sourcing Policy, identifying incidents where fair wages are not paid. Reaching a Living Wage is currently a good practice benchmark of the Responsible Sourcing Policy which suppliers are expected to work towards.

COLLECTIVE BARGAINING
Wage scales are often set by collective agreements. They are determined in consultation with workers or workers’ representatives through collective bargaining. Sound collective bargaining practices ensure that employers and workers have an equal voice in negotiations and that the outcome is fair and equitable. It allows both sides to negotiate a fair employment relationship, including a fair wage. Collective bargaining can take place at an enterprise-level or a sectoral level.

In principle, wage levels set by collective agreements are at the level of a living wage or above, which enables the covered employees to afford at least the basic needs. But it is possible that collective bargaining is too weak, for example, because workers are not organized enough to represent their voice at the bargaining table. This can result in wage levels set by collective agreements that are too low to be considered as a living wage.
Assessing Against the Benchmark
Performance on the benchmark — implementing a living wage for employees across the organization by 2030 — should be assessed by calculating the gap between current wages and living wages for every region in which you have business operations. Estimated values of a living wage, or living wage thresholds, are published per region by various organizations using their own methodologies. In many regions, these living wage thresholds are higher than the legal minimum wage or poverty-line wage. The achievement of the benchmark will be part of the responsibility of companies to respect workers’ rights and contribute to decent work priorities in compliance with international labour standards of the ILO.

Being employed does not preclude living in poverty. In 2019, more than 630 million workers worldwide — almost one in five of all those employed — did not earn enough to lift themselves and their families out of extreme or moderate poverty. Businesses that have not established time-bound, measurable goals and targets for paying a living wage to all employees by 2030 would fall below the SDG Ambition Benchmark.

For additional detail on determining a living wage, consult the Living Wage Supplement.

Business Value
Committing to being a living wage employer supports a happier, healthier and more productive workforce, reduces turnover costs and addresses consumer, customer, investor, and shareholder concerns about a company’s respect for workers’ rights.

One company found that during the first year of ensuring a living wage for their sub-contracting staff, turnover in their cleaning staff dropped from 44 per cent to 27 per cent. Absenteeism also dropped by 10 per cent. According to a study of 800 accredited living wage businesses in the UK conducted by Living Wage Foundation and Cardiff Business School, living wages can produce a more productive workforce: 57 per cent of companies said it increased the commitment and motivation of their employees; 86 per cent felt it enhanced the company’s reputation; 84 per cent said it differentiated their organization from others in the industry.

ILLUSTRATIVE INDUSTRY IMPACT
Retail: According to IndustriALL, more than 90 per cent of workers in the textile industry have no possibility of negotiating their salaries or working conditions. The garment industry is traditionally a low paying industry with poor working conditions. A fundamental change based on an industry wide collaborative effort by all stakeholders will be needed to provide relief to workers from poverty wages and crippling working hours.
Hospitality: Hospitality and tourism account for 330 million jobs, one in 10 in the world. The industry has the highest proportion of jobs paying the minimum wage of any sector, at around 30 per cent of the total. Given that minimum wage does not always allow for decent standards of living, implementing living wage, benefits and other worker protections in hospitality would have a significant impact.

PRELIMINARY ACTIONS
Develop an overall fair wage strategy: The Living Wage benchmark is part of a company’s compensation policy. A fair compensation policy encompasses typical sustainability dimensions like living wage and equal salary but is far more comprehensive and includes other wage practices and pay systems indicators. For example, wages should be adjusted to economic and social indicators, paid regularly and formally in full, workers are fully informed about their wage, wage progresses proportionally along with enterprise sales and profit growth and wages progress along with changes in intensity at work, technological contents and the evolving skills and tasks of the labour force.

Conduct due diligence across your direct and indirect operations: As part of the business responsibility to protect and respect human rights outlined in the UN Guiding Principles on Business and Human Rights, working poverty caused by low wages in the workplace and supply chains should be reflected in business human rights due diligence approaches.

Engage in Social Dialogue Process: Achieving this target requires a systematic assessment and a strong social dialogue on the level of the wages paid across all locations where a business operates, mandating salaries are set at or above the Living Wage benchmark.

Understand the impact of supply chain management on wages: It might be challenging for a company to ensure the payment of living wages in global supply chains for a number of reasons. In many cases it is not the legal employer; the first or second tier supplier is. Purchasing practices between the buyers and the suppliers however influence wages and working conditions. Buyers can put pressure on suppliers in terms of timeline, prices, technical specifications, and delivery, which have direct effects on suppliers’ capacity to provide living wages and decent working conditions. It is important to better understand how buying prices relate to wages. Collaborative action at the industry-level and the engagement and collaboration of key stakeholders is crucial to building leverage at the national level to ensure a living wage for all workers.

KEY RESOURCES
- International Labour Organization
- The Anker Methodology
- IDH
- The Global Living Wage Coalition
- Oxfam
- The Fair Wage Network
- BSR
- Ethical Trading Initiative
- ACT
- Ergon Associates
- Wage indicator Foundation

100% OF EMPLOYEES ACROSS THE ORGANIZATION EARN A LIVING WAGE
BUSINESS INTEGRATION
RAISING AMBITION

INTEGRATION COMPLEXITY*

Understanding Integration
This section provides directional guidance on how you can design your technology systems to support the integration of a living wage methodology and calculation into your corporate wage strategy. A company must take a number of crucial steps to achieve this, from identifying a definition and calculation methodology to building leadership support and budget approval. Alongside these, companies must seek to hardwire the new threshold, based on a defined calculation methodology, into core Human Resources and resource planning software to ensure employee wage decisions in all functions and markets are informed by a consideration for a living wage.

By using technologies such as analytics and machine learning, companies can not only build the living wage benchmark into wage strategies but can also automate the calculation based on changing macroeconomic data (e.g. cost of living) and assessments of compliance across the business. Streamlining these processes supports the implementation of the benchmark and drives accountability for adherence and progress.

Journey towards Integration
By engaging with technology partners, companies can design systems that make living wage part of the processes that underpin corporate wage structures. In doing so, you should strive for:

Dynamic compensation systems
overhaul of HR compensation systems that transition from static wage reviews to periodical, dynamic wage setters for the entire workforce.

Actionable insights
leveraging analytics tools to provide quick views of progress towards the living wage across functions and geographies to inform decision making.

Employee engagement and sensitization
developing processes for communication on living wage commitment with staff and external stakeholders to reach global coverage and no new hires below living wage.

STREAMLINING ASSESSMENT

Once a calculation methodology is selected to define the Living Wage benchmark for the business’ different areas of operation, an assessment of all wage levels globally for all direct employees is required to identify how many of your staff are paid a living wage or above. This means identifying all of your employees and their current pay levels for all types of contracts (current salary levels of full-time employees, part-time and temporary workers, contractors’ employees that work on the company’s premises, etc.). This will include consultation with different units at the country level and can be initiated via a survey. A decision will need to be taken on how wage levels are defined and calculated such as if the calculation takes into account non-mandatory benefits, such as extended health benefits that the employer may provide, bonuses, or in kind payments.

Businesses can leverage intelligent functionality in Human Resources systems. Hardwiring the living wage calculation and threshold into these tools enable efficient assessments that inform more impactful decision making as a business seeks to transition any employers currently not earning a living wage.

AUTOMATE REVIEW AND UPDATES

As the living wage calculation is based on changing indicators in different markets — such as regional cost of living, taxes, cost and availability of public services — it is crucial for companies to establish processes for monitoring and updating the living wage levels to reflect these changes. Companies should design systems to leverage digital tools such as machine learning, which can automate the data flows for these indicators, in order to conduct these updates regularly and reliably.

Illustrations of Integration

C-SUITE OWNERSHIP
Chief Human Resources Officer

100% OF EMPLOYEES ACROSS THE ORGANIZATION EARN A LIVING WAGE

* See more in SDG Ambition Integration Guide chapter on Preparing for Integration

8% of 200 brands reviewed by the Fashion Revolution’s Fashion Transparency Index report on any annual progress towards living wages.

*  See more in SDG Ambition Integration Guide chapter on Preparing for Integration
SDG AMBITION APPROACH
Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

RAISING AMBITION

 IDENTIFY RELEVANT BENCHMARKS BASED ON PRIORITIES

NEW GOAL IN LINE WITH BENCHMARK’S LEVEL OF AMBITION

WORKFORCE MANAGEMENT
Assess living wage in all areas of operation, and raise wage for all employees who fall under respective minimum

POLICY EXTENSION & ADVOCACY
Scaling and global outreach, cascade the policy beyond direct employees to influence business partners, contractors and other companies

Employees paid a living wage

Procurement staff trained on sustainable sourcing and the link between purchasing practices and wages

Fundamental: Employees below living wage; Employees on living wage

Aspirational: Annual breaches of living wage policy

Fundamental: Adoption of sustainable procurement practices by department; Contractors engaged on living wage policies; Suppliers engaged on living wage policies

Aspirational: Suppliers providing a living wage; Contractors hired on/above living wage

COMPENSATION ADMINISTRATION

HR ADMINISTRATION

PROCUREMENT & SUPPLY CHAIN

LEGAL & COMPLIANCE

AUTOMATE BENCHMARK CALCULATION WITH REAL-TIME REVIEW AND UPDATES
Tools and core systems can be designed to make calculations for all employees, as well as automate reviews and provide real-time flags of breaches of the living wage policy.

MACHINE LEARNING FOR SUPPLIER ASSESSMENT AND RISK CATEGORIZATION
Supplier data and characteristics can help identify partners or suppliers that may be at greater risk of not providing living wages.

KDD1

How might you embed the living wage calculation into core HR systems and automate updates based on real-time macroeconomic data?
Once a living wage methodology is adopted and metrics for calculation defined, companies can leverage tools enabled by analytics and machine learning to automate the calculation of the benchmark, provide alerts in instances of non-compliance, and also pull in real-time data on indicators such as regional cost of living to ensure the living wage calculation remains up-to-date in all areas of operation.

KDD2

How might you evaluate your supplier network’s compensation policies and encourage supplier improvement?
Companies can tackle opaque supply chains by leveraging digital tools to produce risk profiles on suppliers based on areas of operation and products sold. Supplier improvement program can be formulated on supply chain management tools to engage a company’s most critical partners on opportunities to improve their compensation policies and ultimately achieve living wage coverage.

All KPIs and metrics listed are directional, drawing on existing reporting standards. Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.
BUSINESS SYSTEMS DESIGN

How might you embed the living wage calculation into core HR systems and automate updates based on real-time macroeconomic data?

Once a living wage methodology is adopted and metrics for calculation defined, companies can leverage tools enabled by analytics and machine learning to automate the calculation of the benchmark, provide alerts in instances of non-compliance, and pull in real-time data on indicators such as regional cost of living to ensure the living wage calculation remains up-to-date in all areas of operation.

Embedding the threshold in core HR systems is essential to build awareness of living wage and salary requirements for recruiting teams as well as employees. Making living wage information available alongside hiring bands and other relevant recruiting details is an initial step that helps decision-makers compare their hiring requirements against a living wage goal and adjust accordingly, ensuring all new hires are employed on a living wage or above.

How might you evaluate your supplier network’s compensation policies and encourage supplier improvement?

This benchmark is focused on direct employees and does not cover the extension of the living wage to business partners or suppliers. However, companies do have the opportunity to design business systems for the encouragement of better compensation policies among their partners and peers and should do so when possible. For example, by leveraging digital-enabled risk assessment tools to create supplier risk profiles, companies can map partners with higher human rights risks to inform sourcing decisions as well as preventative and mitigating action.

In addition, companies can use learning management systems to engage procurement staff on purchasing practices focused on encouraging more progressive compensation structures in suppliers. The ACT Accountability and Monitoring framework provides ACT member brands with an agreed set of indicators and monitoring instruments to implement their purchasing practice commitments, which can be embedded in procurement systems and training processes.

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1. There is no universally agreed definition of a living wage as a concept and there is no universally accepted amount that defines such remuneration. The definition used in this document is based on the definition of the Global Living Wage Coalition and incorporates the main ideas found in over 60 living wage descriptions and definitions from human rights declarations; national constitutions; NGO, multinational, and corporate codes of conduct; International Labour Organization (ILO) documents; and statements of major historical figures (Anker 2011).
2. ILO
3. Pew Research Center
4. UN Global Compact, DNV GL (2010) Anniversary Report — Calculation: 22 per cent of companies report to priorities SDG 1, of these, 85 per cent implement and promote a living wage.
5. The Sustainable Trade Initiative (SDI) has developed a set of objective criteria for the minimum elements a Living Wage benchmark methodology should include to be reliable.
6. See also “Decent Work Toolkit for Sustainable Procurement”, developed by the UN Global Compact Decent Work in Global Supply Chains Action Platform.
7. International Labour Organization (ILO)
8. Livingwage.org
9. Living Wage Foundation
10. IndustriALL
11. World Travel and Tourism Council
12. Deutsche Bank Market Research
13. Fair Wage Network — 12 Fair Wage Dimensions
14. Earning a living wage is a basic human right as included in the Universal Declaration of Human Rights: “Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection” (Article 23:1.3).
16. Fashion Revolution
17. OECD
18. ACT
100% SUSTAINABLE MATERIAL INPUTS THAT ARE RENEWABLE, RECYCLABLE OR REUSABLE

Benchmark Information
This benchmark helps embed circular economy practices into material selection and product design. This benchmark specifically applies to product and packaging design — ensuring those materials and feedstocks are 100 per cent sustainable to the highest possible environmental and social standards — within the scope of business operations and products and services. The objective is to design for continued material use so that economic activity is decoupled from resource extraction. This benchmark follows the timeline of 2030 set by SDG 12: Responsible Consumption and Production.

Assessing Against the Benchmark
Performance against the benchmark — percentage of sustainable inputs by the year 2030 — can be assessed in line with the targets identified in SDG 12 and guidance from the UN Global Compact’s Advisory Group on Supply Chain Sustainability. Companies should strive to make advances in their product design via channels including resource efficiency, materials recycling, identifying and selecting the most renewable inputs possible, and when possible certifying these outcomes with leading third-party certification programs. Businesses that have not established goals in line with achieving 100 per cent sustainable inputs by 2030 in line with Agenda 2030 would fall below the SDG Ambition Benchmark.

Business Value
Circular models are particularly attractive for the value at stake for business: for instance, shifting to circular inputs in the fashion industry offers an opportunity of $30 to 90 billion (3 to 8 per cent of EBITDA) by 2030.1 In some instances, companies can reduce acquisition costs by replacing traditional materials with renewable alternatives. One global furniture company uses rice straw, a production byproduct, as a material input, which reduces burning of this fiber that would otherwise be considered waste and reduces air pollution and production costs.2 Designing for sustainable inputs can also spur product innovation that drives growth: one plant-based meat company was recently valued at $4 billion, a reflection of growing market interest in alternative proteins.3

BUSINESS IMPACT ON SUSTAINABLE INPUTS
The trajectory of annual global resource use is on track to exceed the planet’s available resources by over three times each year by 2050.4 Product design is often biased towards single-use materials: 40 per cent of all plastics globally are used for single use packaging.5 However, working towards this benchmark offers a transformative opportunity to shift towards a circular economy (CE) that benefits consumers, investors, and the planet. Accenture has assessed circular business models could unlock $4.5 trillion in value by 2030.6 The Ellen Macarthur Foundation (EMF) brings together business, innovators, cities and governments, universities, and thought leaders on circular economy topics. It counts over 130 companies as members.

9% only 9 per cent of the 92.8 billion tons of minerals, fossil fuels, metals and biomass that enter the economy annually are re-used in some way7

90% of the environmental impact of the average product sits in extracting and refining material inputs8

€600B could be saved on primary resources by EUs businesses by 2030 by transitioning to a circular economy9
Electronics: 53.6 million metric tonnes of e-waste is generated worldwide, up 21 per cent in the past 5 years. This is harmful to the environment and human health: a total of 50t of mercury and 71kt of brominated flame retardant (BFR) plastic are found in globally undocumented flows of e-waste annually, which are released into the environment and exposed to workers. Designing to limit waste in the electronics industry, combined with closed material loop supply chains and virgin material reduction are some ways to achieve this benchmark for the industry.

Retail and Fashion: 87 per cent of material used in clothing production is sent to landfill or incinerated after final use; less than 1 per cent is recycled to make new clothing. Current industry practices favor material blends and chemicals which make it difficult to retain the value of the material. Products designed with sustainable inputs, choosing fiber inputs with lower environmental impact, and taking back used clothing are some of the ways fashion can integrate CE practices into their business.

Consumer Goods: Single-use plastic packaging accounts for about half of the plastic waste in the world. Packaging is a major opportunity area for consumer goods companies to introduce circularity; packaging should be designed to be recoverable and recyclable. 63 per cent of CDP respondents reported investing in circular technologies such as depolymerization, which can break down finished fibers in raw materials for re-use.

PRELIMINARY ACTIONS

- **Evaluate design processes:** Product design methodologies must be re-examined to incorporate circular material input. Material specification can be adapted to more sustainable inputs for existing and new product categories.
- **Life cycle assessment to determine environmental impact:** Conduct a life cycle assessment to evaluate the environmental impact of material inputs through their entire life cycle, including climate impact, ease of recycling and the material’s potential for renewal. Identify potential alternatives for material inputs without the potential for reuse or recycling.
- **Determine the scope:** Evaluate your supply chain for opportunities to create material loops to recycle and reuse virgin material. The resulting materials could be sold externally or re-integrated into the existing business.

KEY RESOURCES

- The Circular Economy Handbook
- Ellen MacArthur Foundation
- Platform for Accelerating the Circular Economy
- World Resources Institute
- Circular Design Guide

COMPANIES TAKING ACTION

**IKEA**

is on a mission to become a 100 per cent circular company by 2030, committing to designing all of their products using only renewable or recycled materials. They are also aiming to eradicate single-use plastics by the end of 2020.

**SCHNEIDER ELECTRIC**

has set a goal of all new products being "eco-designed": created to be easily repaired, upgraded and dismantled at end-of-life. They provide product profiles so that customers can understand the product’s carbon footprint, which also include end-of-life instructions.

**MATTEL**

recently announced a new goal of 100 per cent recycled, recyclable or bio-based plastics in products and packaging by 2030. They work with the Forest Stewardship Council to source paper and wood inputs; currently 93 per cent of their products and packaging are FSC certified and will debut their first 100 per cent sustainably sourced product made of sugarcane plastic in 2020.
BUSINESS INTEGRATION

RAISING AMBITION

Journey towards Integration
Driving progress towards 100 per cent sustainable inputs, companies should work to design systems focused on:

Embedding circular principles in product assessment process
Integrating tools to understand the circularity and sustainability of products.

Defining guidelines and targets for individual products and the full portfolio
Updating sourcing strategy and guidelines for materials used in products and packaging.

Gaining visibility over suppliers and feedstocks
Developing methods for assessing and monitoring compliance with suppliers with sustainable materials sourcing policies.

Understanding Integration
To decouple economic growth from resource use, and transition to a circular economy, companies must embed sustainability at the heart of product design. For most, the central considerations in product and packaging development remain productivity and cost-efficiency. However, faced by mounting consumer and policy pressures on topics such as single-use plastics, and as more businesses recognize the opportunity in circular business models, there has been a drive to understand the impacts across a product’s lifecycle, from raw material extraction to end-of-use. As these considerations are integrated into core product design and material management systems, leveraging tools built on life cycle assessment (LCA) methodologies, businesses can set product and packaging guidelines, encourage innovation, and influence suppliers.

Illustrations of Integration

PRODUCT ASSESSMENT
There are multiple solutions in the market that aim to support circular product design, including free LCA software. Assessing recyclability of products for some industries can be particularly challenging due to complications of attributes such as material blends. Designing core systems to integrate sophisticated tools in product assessment will drive more impactful decisions for sustainable product portfolios. Circular economy experts at The Ellen MacArthur Foundation developed a Material Circularity Indicator (MOI) tool in collaboration with Granta Design, which measures how restorative the material flows of a product are and can be aggregated up to product portfolio, and even further up to company level.

MATERIAL SELECTION
Moving away from virgin and unsustainable feedstocks requires integration of circular principles into the procurement and supplier management processes. Google is building a tool, in partnership with fashion brand Stella McCartney and World Wildlife Fund (WWF), that uses data analytics and machine learning on Google Cloud to give brands a more comprehensive view into their supply chain, particularly at the level of raw material production. Combining Google’s digital tools with their partners’ respective industry and sustainability expertise, the ambition is to create a data-enriched decision-making platform, bringing visibility to supply chains.

INTEGRATION COMPLEXITY*

C-SUITE OWNERSHIP
Chief Design Officer

39% companies believe they take any action to develop products and services that contribute to the SDGs

$2–3B value opportunity of best practices in packaging design with sustainable end-use objectives across OECD companies

* See more in SDG Ambition Integration Guide chapter on Preparing for Integration

100% SUSTAINABLE MATERIAL INPUTS THAT ARE RENEWABLE, RECYCLABLE OR REUSABLE
SDG AMBITION APPROACH
Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

RAISING AMBITION
IDENTIFY RELEVANT BENCHMARKS BASED ON PRIORITIES
NEW GOAL IN LINE WITH BENCHMARK’S LEVEL OF AMBITION

PRODUCT ASSESSMENT
Embedding re-use and recyclability into design and material selection processes

Mandate recyclability assessments of products/services to test ability for end-of-life sorting, processing and recovery
Implement product design criteria that require the use of recycled and renewable material inputs, durability and recyclability of products

SOURCING
Incorporate recycled and renewable materials and feedstocks at scale

Implement procurement requirements to expand supplier base that meet new sourcing criteria
Increase waste collection across the value chain through collaboration with partners (e.g. manufacturers, retailers) to identify and support collection and processing for recycled materials into products

SUPPLY CHAIN & PROCUREMENT
PRODUCT DESIGN
RESEARCH & DEVELOPMENT
MANUFACTURING & OPERATIONS

INTEGRATING AND COLLABORATING WITH SUPPLIER NETWORK
Developing a robust supplier network with integration that allows for identification of renewable or recyclable materials.

DEFINING MATERIAL GUIDELINES & DRIVE ADHERENCE
Systems can be used to manage sustainability guidelines as they apply to product design and development. Systems should enable tracking of adherence to these guidelines.

How might PLM tools be used to set and maintain guidelines for sustainable inputs? Product lifecycle management, or PLM, tools are widely used for decision-making throughout design and manufacture. These tools can be used to prompt choices that prioritize sustainable inputs alongside other factors such as cost and production time.

KDD1
How might you promote sustainable inputs in material mapping and product design? A variety of tools can be used to classify products on the basis of their sustainability inputs, as well as to identify and introduce circular alternatives to existing materials.

KDD2
How might you drive visibility over sourced materials and suppliers to identify and promote the use of renewable or recycled materials? Embedding a sustainable procurement strategy in supplier management systems and processes can ensure that material inputs can be re-used or recycled, and identify supplier products that themselves have been created using recycled materials.

KDD3

100% SUSTAINABLE MATERIAL INPUTS THAT ARE RENEWABLE, RECYCLABLE OR REUSABLE

* All KPIs and metrics listed are directional, drawing on existing reporting standards. Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.
BUSINESS SYSTEM DESIGN

How might you promote sustainable inputs in material mapping and product design?

Several methods for ensuring a supply chain inclusive of sustainable inputs are well-known. LCAs, supply risk analysis and assessment of environmental impact by product are processes that use foundational data to help understand and select product materials and assist in product design planning.

Companies can begin by assessing the extent to which their current material mapping and product design processes allow for the inclusion of sustainable inputs, then making those inputs visible alongside conventional alternatives.

How might PLM tools be used to define and maintain guidelines for sustainable inputs?

Product guidelines are the foundation for many decisions relevant to sustainable inputs. By incorporating sustainable inputs into product design and development, companies can identify opportunities to transition to alternative materials. Systems used to manage these criteria are key to this approach and can enable tracking of adherence to newly sustainable guidelines.

As a first step, assess your Product Lifecycle Management, or PLM, tools for capability to incorporate sustainable input criteria with an interim goal of including sustainable inputs alongside other factors such as cost and production time.

How might you drive visibility over suppliers to identify and promote the use of renewable or recycled materials?

To deliver on a sustainable sourcing strategy, companies must encourage greater visibility over their suppliers and the materials they procure. This is critical to validate material origins, sustainability certifications, as well as circular credentials regarding recyclable and renewable content.

Digital technologies offer new opportunities for tracking materials in complex supply chains. A blockchain enabled ledger, for example, enables a chain of custody for materials enabling reliable validation of material attributes. GreenToken by SAP is a supply chain solution that offers companies a new level of transparency in their complex raw material supply chain. The cloud platform supported by blockchain technology can track the origin of plastic waste and the percent content of recycled plastic in new circular polymers as well as provide chain of custody information in the agriculture industry from origin to customer.

1 The Circular Economy Handbook, Accenture, 2020
2 Clean air is good for business, World Economic Foundation, 2019
3 Bloomberg
4 With resource use expected to double by 2050, better natural resource use essential for pollution-free planet, UN Environment Programme, 2017
5 “The world’s plastic crisis explained,” National Geographic, 2019
6 The Circular Economy Handbook, Accenture, 2020
7 The Circular Economy Handbook, Accenture, 2020
8 Material circularity indicator, Ellen Macarthur Foundation
9 WWF and Google Partner on Fashion Sustainability Platform, Google, 2020
10 IKEA, 2020
11 Schneider Electric wins global award for contribution to the circular economy, PRNewswire, 2019
12 Mattel announces goal to achieve 100 per cent recycled, recyclable or bio-based plastic materials in all products and packaging by 2030, Businesswire, 2019
13 UN Global E-Waste Monitor
14 Make fashion circular, Ellen MacArthur Foundation
15 Single-use plastics: A roadmap to sustainability, UN Environment, 2018
16 Fast moving consumers, CDP, 2019
17 The open source Life cycle and assessment software, OpenLCA
18 Material circularity indicator, Ellen Macarthur Foundation
19 WWF and Google Partner on Fashion Sustainability Platform, Google, 2020
20 UNGC 2019 Progress Report
BENCHMARK

ZERO DISCHARGE OF HAZARDOUS POLLUTANTS AND CHEMICALS

Benchmark Information

This benchmark aims to eliminate hazardous industrial pollution including chemicals, materials and wastewater. The benchmark also includes pollutants released into the air (such as soot or particulate matter), water (such as groundwater contaminated with waste or fertilizer) and soil (such as hazardous mining byproducts). Globally, pollution has far-reaching consequences: for instance, ambient and household air pollution causes seven million deaths per year,^1^ agriculture runoff of fertilizers and pesticides contaminates waterways,^2^ and industrial activity degrades soil health, reducing plant metabolism and agricultural output.^3^ The scope of this benchmark covers industrial pollution generated in direct operations and across the supply chain. The timeline for this benchmark is set by the Agenda for Sustainable Development as 2030.

Assessing Against the Benchmark

Performance on the benchmark — achieving zero discharge of hazardous pollutants and chemicals — can be assessed in line with guidance provided by the relevant UN bodies, such as the United Nations Environmental Programme (UNEP)^4^’s Global Environment Outlook^5^ and initiatives including the Global Programme of Action for the protection of the Marine Environment from Land-based Pollution.^6^ Businesses that have not established targets charting a pathway to eliminating pollutants released into the air, water and soil by 2030 would fall below the SDG Ambition Benchmark.

BUSINESS IMPACT ON HAZARDOUS POLLUTANTS

Commitment to this benchmark will have an interlinked impact across Agenda 2030, in particular on SDG 12, “Responsible Consumption and Production”. RoadMap to Zero is a forum that works with industries to help them reduce their chemical footprint. They have 70 contributors consisting of 23 signatory brands, 33 value chain affiliates and 14 associates.

- **$225B** annual cost to the global economy in lost labour income can be attributed to air pollution^6^
- **59%** of water in high-income countries is used for industrial purposes compared with 88 per cent in low-income countries^7^
- **80%** of global wastewater goes untreated^8^
## Business Value

Companies can lower costs by proactively installing pollution controls across their plants and equipment; one study found that cereal makers could realize $12M in savings through reducing fertilizer runoff. Companies with a good pollution control record are less likely to be in conflict with community groups and government environmental agencies, reducing risk of fines and penalties. For example, automakers operating in the European Union are at risk of paying billions in fines if they do not meet new emission standards being enacted in 2020.

## PRELIMINARY ACTIONS

**Determine the sources of pollutants:** Determine the sources of hazardous discharge across the supply chain and evaluate the impact on water, land, and habitat.

**Identify and classify the chemicals and audit the processes:** Identify all chemicals used, the quantity of usage and discharge and classify the chemicals as per local government guidelines or other standards, such as the 11 classes of hazardous chemicals identified by Greenpeace. Companies can align the audit protocol with standardized processes and benchmark existing standards and existing data at facilities.

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### COMPANIES TAKING ACTION

<table>
<thead>
<tr>
<th>Company</th>
<th>Action Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAST RETAILING</td>
<td>Committed to achieving zero discharge of hazardous chemicals associated with supply chains and the lifecycles of products. They work with other brands &amp; companies in the apparel sector, material suppliers, the broader chemical industry, NGOs and other stakeholders to achieve this goal.</td>
</tr>
<tr>
<td>LEVI STRAUSS &amp; CO</td>
<td>Committed to zero discharge of hazardous chemicals for all its products and supply chain by 2020 through their Screened Chemistry initiative. In 2019, they announced they will become Eco Passport certified via third party, OKO-TEX.</td>
</tr>
<tr>
<td>ADIDAS</td>
<td>Aims to achieve zero discharge of hazardous chemicals (ZDHC) across their supply chain by 2020, defining an end-to-end approach managing chemical inputs, monitoring supplier progress and controlling the finished end product.</td>
</tr>
</tbody>
</table>

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### KEY RESOURCES

- UN Environment
- Environmental Defense Fund
- Natural Resources Defense Council
- FAO Global Symposium on Soil Pollution
- European Environment Agency
- Roadmap to Zero
Assessing the product portfolio to understand the source and impact of hazardous chemicals can reveal targeted intervention strategies. GreenScreen is a platform used by businesses to track their chemical inventories and compare the hazardous characteristics of chemicals, materials and products. Apple has integrated zero discharge of chemicals into their core business, leveraging the GreenScreen tool to map their chemicals, restrict their use through a Regulated Substances Specification list, and innovate product alternatives in their Environmental Testing Lab.

Digital cross-organizational systems for tracking hazardous waste, such as Laboratory Information Management Systems (LIMS) and Treatment, Storage and Disposal Facilities (TSDF) vendor mapping, enable businesses to locate sources of chemical waste or the appropriate treatment technology to prevent the discharge of hazardous chemicals. Establishing systems that identify transactions across TSDF such as invoices, can provide granular details of discharged substances. Additionally, categorizing total discharge of hazardous chemicals by product, region, and end-disposal location can help institute effective interventions and control measures.

Certification standards and testing labs around the world have been approved by ZDHC as MRSL Conformance Indicators

* See more in SDG Ambition Integration Guide chapter on Preparing for Integration
**SDG AMBITION APPROACH**
Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

**RAISING AMBITION**

**IDENTIFY RELEVANT BENCHMARKS BASED ON PRIORITIES**

**NEW GOAL IN LINE WITH BENCHMARK’S LEVEL OF AMBITION**

**REDUCTION**
Reduce the volume of waste and pollutants produced by business activities which could leak into surrounding water sources

- Assess chemical inputs across operations
- Identify leakages across operations and product categories
- Implement strategy for prioritised phase-out starting with high-risk, high-volume pollutants via reduction or safer alternatives

**PREVENTION**
Treat and recycle pollutants to prevent leakage and environmental damage

- Implement interventions and control measures to prevent harmful leakage of pollutants into the environment (e.g. agricultural run-off catchment; wastewater recycling)

**HAZARDOUS CHEMICAL MANAGEMENT**

**PRODUCT COMPLIANCE**

**ENVIRONMENTAL MANAGEMENT**

**WASTE MANAGEMENT**

**IDENTIFYING MAIN SOURCES OF POLLUTANTS IN PRODUCTS & PRODUCTION PROCESS**
Profiling product categories based on chemicals used or pollutant by-products can be embedded in the innovation process to inform decision making for alternative materials.

**SERVICE PROVIDER INTEGRATION FOR DISCHARGE TRANSPARENCY**
Establishing systems that identify transactions across Treatment, Storage and Disposal Facilities vendors such as invoices, can provide granular details of discharged substances.

**IOT FOR EARLY WARNING AND LEAK DETECTION**
The use of meters and sensors can provide early warnings of potential leaks or discharge of pollutants and hazardous materials to the environment.

**KEY DESIGN DECISIONS (KDD)**

**KDD1**
How might you integrate chemical or pollutant assessment into the product design and manufacturing processes to eliminate negative impact?

- Material data needs to be available and integrated in product or manufacturing planning and decision making to promote innovation focused on elimination of hazardous chemicals and pollutants.

**KDD2**
How might you streamline and automate data flows from treatment providers to understand current state?

- Leverage machine learning to automate data collection from third-party vendors who manage hazardous waste to ensure available and up-to-date data on chemicals and pollutants in waste streams.

**KDD3**
How might you leverage smart technologies to automate prevention of discharge?

- Meters and sensors can be used to monitor conditions and detect anomalies, even in areas of remote operations. These tools can allow for quick identification of leaks, which if paired with other technologies (e.g. remote operating valves), can be isolated and stopped without a person having to be physically present.

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**METRICS**

- **Reduction of hazardous chemicals used in products and operations (inc. other pollutants)**
- **Increase in waste treatment rate**

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**METRICS**

- **Reduction of hazardous chemicals used in products and operations (inc. other pollutants)**
- **Increase in waste treatment rate**

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**EXAMPLE ACTIONS**

- **KDD1**
  - How might you integrate chemical or pollutant assessment into the product design and manufacturing processes to eliminate negative impact?
  - Material data needs to be available and integrated in product or manufacturing planning and decision making to promote innovation focused on elimination of hazardous chemicals and pollutants.

- **KDD2**
  - How might you streamline and automate data flows from treatment providers to understand current state?
  - Leverage machine learning to automate data collection from third-party vendors who manage hazardous waste to ensure available and up-to-date data on chemicals and pollutants in waste streams.

- **KDD3**
  - How might you leverage smart technologies to automate prevention of discharge?
  - Meters and sensors can be used to monitor conditions and detect anomalies, even in areas of remote operations. These tools can allow for quick identification of leaks, which if paired with other technologies (e.g. remote operating valves), can be isolated and stopped without a person having to be physically present.

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**BUSINESS INTEGRATION**

- **All KPIs and metrics listed are directional, drawing on existing reporting standards. Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.**
BUSINESS SYSTEM DESIGN

How might you integrate chemical or pollutant assessment into the product design and manufacturing processes to eliminate negative impact?

As environmental pollution control technologies have become more sophisticated and expensive, there is growing interest in designing products and manufacturing processes that eliminate hazardous waste at the outset. Assessment of known pollutants allows companies to evaluate potential hazards, providing information necessary to make an accurate waste determination and consider appropriate strategies for management, minimization, and disposal.

A comprehensive survey of chemical and potentially toxic inputs across all areas of the business is a foundational step that will allow your company to understand the extent of pollution risk.

How might you leverage smart technologies to automate the prevention of discharge?

Pairing internal data on use of pollutants with technology products such as leakage protection systems, companies can identify discharge occurrences with a high degree of accuracy and take immediate action to ensure that damage is mitigated.

If such technologies are inaccessible or cost-prohibitive, commonly collected data such as point in time water quality samples or pressure readings taken manually can be used to identify anomalies. Risk assessments can be used to evaluate potential release or discharge points and inform your strategy for implementing meters and sensors at points identified as highest risk.

How might you automate the data flows from treatment providers to understand current state?

Companies enlisting waste management providers for the treatment of their hazardous waste can gain a comprehensive view of the chemicals and pollutants they discharge by integrating these service providers onto central systems.

By automating the data flows with such suppliers, organizations can gain insights into not just the chemicals and pollutants present, but also total cost of treatment including storage and/or disposal. Understanding the full cost of treatment can then help drive the business case for using alternative materials or moving to solutions such as on-site treatment. Additionally, enabling data flows with treatment providers can significantly reduce manual data entry of analysis reports.

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**BENCHMARK**

**ZERO WASTE TO LANDFILL AND INCINERATION**

**SDG IMPACT**

6, 9, 11, 13, 14, 15

**TIMELINE**

2030

**SCOPE**

- Operations
- Products & Services
- Value Chain

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**Benchmark Information**

The zero waste to landfill and incineration benchmark helps organizations evaluate and optimize material flows and eliminate all solid waste from operations. While often most relevant in the context of manufacturing where material use runs high, this benchmark is equally applicable to any business with physical facilities and operations. According to the US Environmental Protection Agency (EPA), 2.2 billion tons of landfill waste is projected to be produced annually by 2025. The scale of solid waste makes clear the need for business to systematically avoid generating or discharging waste into the environment. In addition to industrial waste, organic material such as food scraps also have a significant impact on the environment which are addressed by the benchmark: the decomposition of waste from landfill sites accounts for 12 per cent of global methane emissions, which is a greenhouse gas 21 times more potent than carbon dioxide. The timeline to achieve this benchmark is set by the Agenda for Sustainable Development at 2030.

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**Illustrative Industry Impact**

**Construction:** 30 per cent of construction and demolition project materials end up in landfills. Constructing flexible structures which can be readjusted without major demolition, as well as shifting to low-waste or biodegradable building materials would substantially reduce the industry’s contribution to global waste.

**Food & Beverage:** Food accounts for a third of global landfill waste. This figure is made all the more shocking by the fact that recouping this loss would provide enough food to feed 2 billion people. Hunger prevention coalitions can capture the value of these resource by helping organizations divert food from waste streams at harvest and point of sale.

**Retail:** 2.2 billion kilos of returned goods enter US landfills each year — half of all returned retail items. Minimizing returns and reducing their impact through sharing more product detail and technologies like virtual try-on could lessen the environmental impact.

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**BUSINESS IMPACT ON WASTE**

The private sector is a major contributor to global solid waste streams. It is estimated that 7.6 billion tons of industrial solid waste is produced each year in the United States alone. Business can also find best practices through the Zero Waste International Alliance, which is an internationally recognized source for waste standards.

- 35% of waste streams consist of recyclables
- 1.3B tons or approximately $750B of food is lost or wasted annually
- 5.7B kg of waste is generated globally per day
- 22% of waste in high-income countries is incinerated

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Assessing Against the Benchmark

Performance on the benchmark, achieving zero waste to landfill and incineration, can be assessed in line with guidance provided by the United Nations Environment Program (UNEP), the World Bank and the US EPA. Industries have a range of waste reduction targets in line with various baselines specific to their waste outputs. Businesses which are not in line with achieving zero waste diverted to landfill or to incineration in the context of their industry by a 2030 horizon would fall under the benchmark.

Business Value

Achieving zero waste can have a significant impact on Greenhouse Gas (GHG) emissions and help companies save on disposal and treatment costs. Some industries, like construction, have seen cost savings of up to 40 per cent as a result of reducing their waste. Similarly, one automaker’s waste initiative at a single plant resulted in $1–2 million savings annually. Redirecting waste into recycling markets can also offer a potential revenue opportunity. In one example, a global apparel manufacturer repurposed scrap into flooring material now used in more than 10,000 real estate projects globally. Diverting waste from landfill and incineration is a proven means for business to enhance its sustainability credentials while equally observing direct business benefits.

PRELIMINARY ACTIONS

Assess current waste streams:
Determine the source, type, and amounts of waste generated to establish a baseline and identify areas of improvement. Sort waste streams by material type such as liquid, solid, organic, recyclable, or hazardous waste to determine the nature of their treatment and disposal.

Partnership Ecosystem Identification:
Identify key partners such as waste management and waste disposal companies that can serve as partners to achieve zero waste targets.

KEY RESOURCES

» World Bank: What a Waste
» FAO State of Food & Agriculture
» Zero Waste International Alliance
» WHO
» WRAP
BUSINESS INTEGRATION

RAISING AMBITION

WASTE ANALYSIS

Integrating digital tools enabled by technologies such as artificial intelligence (AI) and the internet of things (IoT) into core systems can accelerate waste reduction and cost-savings. IKEA UK, for example, employed an AI-enabled waste analysis tool from Winnow Solutions to monitor food waste in its store kitchens. This enabled IKEA to achieve a 50 per cent food waste reduction and save £1.4m in costs across IKEA’s 23 UK stores.16

PARTNERSHIP INTEGRATION

Once a company understands their waste streams, the next step is identifying solutions for diversion. Cloud and AI enabled software can support this endeavor, automating the selection of recycling providers for specific materials and regions. Rubicon is a software company with a mission to use its cloud-based big data platform to end waste by helping companies realize the economic value in waste streams. The platform connects businesses of all sizes with waste management and recycling companies, resulting in higher landfill diversion rates, creative reuse of waste material, and enhanced insights from waste data.17

C-SUITE OWNERSHIP

Chief Operations Officer

Journey towards Integration

Companies should assess their existing processes for collecting waste data, as well as their ability to leverage digital technologies for advanced waste management. Engaging with technology partners on waste elimination, businesses can strive to achieve:

Advanced materials master data

Complete visibility of waste generation points, material attributes and existing waste-disposal processes to develop a zero waste strategy and action.

Zero-waste driven product innovation

Identification of opportunities to both design out waste in products as well as unlock new revenue streams through by-product innovation.

Streamlined ecosystem engagement

Integration of intelligent systems and shared platforms to interact seamlessly with waste management providers and the secondary materials marketplace.

INTEGRATION COMPLEXITY*

Understanding Integration

Stronger understanding of waste produced by business operations — what it is, where it comes from, where it ends up — leads to better elimination strategies. However, this level of visibility remains a significant challenge for many companies due to a lack of reliable, standardized data on waste flows. New digital technologies such as smart bins or live waste mapping can capture real-time, detailed data which can unlock opportunities for businesses to reduce, re-use and recycle previously discarded materials.

Illustrations of Integration

WASTE ANALYSIS

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18X

Globally, industrial waste generation is almost 18x higher than municipal waste produced18

* See more in SDG Ambition Integration Guide chapter on Preparing for Integration
SDG AMBITION APPROACH

Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

RAISING AMBITION

IDENTIFY RELEVANT BENCHMARKS BASED ON PRIORITIES

NEW GOAL IN LINE WITH BENCHMARK’S LEVEL OF AMBITION

WASTE REDUCTION

Deploy waste prevention solutions to eliminate waste generation at the source

Fundamental: Aggregated volume of each waste stream; Amount of hazardous waste generated; Sites designated as zero waste to landfill or incineration

Aspirational: Volume of waste by material stream (e.g. polymer); Waste from production by product type; Waste by destination (e.g. landfill, incineration)

RE-USE & RECYCLE

Re-purpose waste for other uses and needs, either as new internal inputs or conversion to new products for other uses

Fundamental: Total waste by re-use or recycling

Aspirational: Total waste recovered by material type; Waste recovery by end use

Increase in waste recycling rate

Revenues from waste valorization

Reduction in waste production

MANUFACTURING & OPERATIONS

MANAGEMENT & WASTE

ENVIRONMENT MANAGEMENT

SALES & DISTRIBUTION MANAGEMENT

RESEARCH & DEVELOPMENT

SUPPLY CHAIN & PROCUREMENT

INCREASING VISIBILITY OVER WASTE STREAMS

Develop processes and tools for sophisticated waste stream analysis, identifying the different material & products produced and embedding their tracking in core waste management systems.

KDD1

How might you define specific waste attributes to support more granular measurement of waste streams? The definition of points of waste generation, sites and material attributes will provide more visibility on waste generation. Specific attributes can drive waste disposal processes within facilities and enable increased diversion.

EXTERNAL SERVICE PROVIDER INTEGRATION TO MONITOR AND ADVANCE RECYCLING

Integration with external waste management and recycling companies to understand material flows, costs and opportunities for resource recovery/diversion which can inform production and product design decisions.

KDD2

How might you automate data collection and manage digital chain of custody for waste recycling? Leveraging a combination of advanced technologies, such as barcodes, smart bin sensors and analytics tools, can enable digital tracking of waste and automate data collection.

EMBEDDING WASTE BY-PRODUCT INTO MATERIAL RESOURCE PLANNING AND PRODUCT INNOVATION

Leveraging material management solutions for the reintroduction of waste as a usable and consumable product input.

KDD3

How might you facilitate the introduction of generated waste as a consumable or marketable material in your technology system(s)? Generated waste or by-products must be visible in central resource and material management systems so it can be utilized as a material internally or marketed and sold externally.

BUSINESS INTEGRATION

RAISING AMBITION

* All KPIs and metrics listed are directional, drawing on existing reporting standards. Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.

VIEW THE INTEGRATION GUIDE

SDG AMBITION APPROACH

Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.
The monitoring of waste collection and disposal is a complex task. To simplify it, the use of certain technologies like Reverse Vending Machine (RVM), smart bins, or barcodes can be used to automate the process. It’s crucial to integrate the data collected by partner waste management and recycling service providers into business systems. This allows you to understand material flows, costs and opportunities for resource recovery/diversion which can inform production and product design decisions.

Using a waste assessment as the foundation, each type of waste can undergo a review of the attributes already tracked versus what is possible to capture via available tools. In this way, waste profiles can be improved upon to help leaders understand how to divert each waste type from landfill and incineration.

Daily operations lead to generation of waste, but there are opportunities for these by-products to be put to use internally (e.g. recycled fibers as an input to a product line) or marketed and sold externally (e.g. organic waste sold as value-added compost). To accomplish this, systems must be designed with flexibility in order to allow for this reintroduction of products and by-products. In this way, after initial material consumption or use, the scrap product can be made available in the system for reuse elsewhere or to be sold.

Technologies such as remote monitoring sensors help to automate this data collection and guide decision-making on the pathway of a given material through a waste stream. Examining the feasibility of remote monitoring by product and waste stream will assist in prioritization of piloting a digital chain of custody solution.
**Benchmark Information**

Adopting this benchmark helps business assess their operations against the latest climate science, the study of structures and dynamics of the Earth’s climate systems, as outlined by the goals of the UNFCCC Paris Agreement and validated by the Science Based Targets initiative (SBTi). The SDG Ambition Benchmark on science-based emissions reduction in line with a 1.5°C pathway provides business critical strategic knowledge in setting a climate specific science-based target and the technical know-how in understanding the role systems play in measuring progress and performance. The SBTi has established a range of criteria to ensure alignment with scientific consensus on what is needed to halt global warming at 1.5°C. A science-based target is inclusive of Scope 1 and Scope 2 GHG emissions, with Scope 3 included dependent on industry and business model. Medium-term (5–15) year timelines are required and longer-term targets up to 2050 help to manage long-term risks and opportunities.

**Assessing Against the Benchmark**

Performance on the benchmark — achieving an emissions reduction in line with a 1.5°C pathway — can be assessed in line with the United Nations Environment Programme assessment of reducing global emissions by 7.6 per cent annually until 2030. However, most companies today establish their own baseline reduction goals consistent with their strategy and operations. Targets will vary by company and must be validated by the SBTi for complying with the 1.5°C pathway. Businesses that have not established emissions reductions targets in line with a 1.5°C pathway would fall below the SDG Ambition Benchmark.

**BUSINESS IMPACT ON CLIMATE CHANGE**

The private sector plays a key role in reducing emissions in line with climate science as 73 per cent of GHGs are produced by the energy sector alone, inclusive of manufacturing, transportation, generation and fugitive emissions. According to the 2020 UNGC Anniversary Report fewer than half (44 per cent) of companies presently report GHG emissions and other strategic climate change data.

- 35% of cumulative global emissions come from just 20 companies
- 90% of these emissions are attributed to use of fossil fuels
- 20% increase in renewables for top multinationals would save 1 billion metric tons of GHG emissions
- 5.5x emissions are from supply chain operations versus direct emissions

**ILLUSTRATIVE INDUSTRY IMPACT**

**Energy:** Decarbonization of the energy sector is essential to reducing energy-related carbon emissions. One study found that 71% of global emissions can be linked to 100 energy companies. Increased efficiency, adoption of renewables, carbon pricing, and carbon capture are among the many ways in which companies can contribute to the low-carbon energy transition.

**Industrial Goods:** GHG emissions related to industrial processes account for about 5.5% of global emissions, growing by 29 per cent between 1990–2020, primarily due to increased refrigeration and production of Hydrofluorocarbons (HFCs). Switching to low-carbon alternatives for use in industrial application could slow this growth trend.
RAISING AMBITION

Business Value

By cutting emissions, switching to renewable energy, and enhancing energy management, companies can lower operational costs, as prices for fossil fuel alternatives continue to decline.\(^{16,18}\) 29 per cent of CEOs who report to have set science-based targets say it has enhanced bottom-line savings.\(^{17}\) Moreover, by investing in low-carbon products and services, companies can spur growth within their operations and help identify new product categories: 63 per cent of CEOs who report to have set science-based targets say it is driving innovation in their companies.\(^{18}\)

PRELIMINARY ACTIONS

Understand your GHG inventory:
Undertaking a GHG inventory will help identify the emissions caused by a given business process. The most commonly used international tool for quantifying emissions is the GHG Protocol.

Disclose your emissions:
Disclosure in annual reporting or to cross-industry disclosure organizations like CDP holds companies and industries accountable to climate science.

Support low-carbon policy:
Policies that advance low-carbon technology and the cessation of fossil fuel subsidies will be essential in moving the needle towards zero carbon. Making these efforts part of your advocacy work underscores commitment to science-based targets and can support implementation.

COMPANIES TAKING ACTION

The Science Based Targets initiative (CDP, UN Global Compact, WRI and WWF) has been driving ambitious corporate climate action since 2015. As of September 2020, close to 1,000 companies are taking climate action aligned with the Paris Agreement, of which over 400 companies have approved science-based targets. The Business Ambition for 1.5°C campaign invites the most visionary leaders to commit their companies to set science-based targets aligned with a 1.5°C pathway in the lead up to COP 26. To date, close to 300 companies have committed and over 100 companies have 1.5°C approved targets.

**ØRSTED**
set a science-based target to reduce its GHG emission intensity from energy production by 96 per cent by 2023. Their approach focuses on building offshore windfarms and converting their power plants to biomass. They have reduced their coal consumption by 82 per cent since 2006 and their power plants will be coal-free by 2023.\(^ {14}\)

**SALESFORCE**
set a science-based target to reduce Scope 1, 2, and 3 emissions by 50 per cent by 2030 from a 2018 base year. Their environmental policy is focused on sourcing 100 per cent renewable energy for operations and working with vendors to set their own science-based targets, in support of becoming a net-zero GHG company.\(^ {15}\)

KEY RESOURCES

- IPCC
- Business Ambition for 1.5°C
- Science Based Target initiative
- GHG Protocol
- The Climate Group

SCIENCE BASED EMISSIONS REDUCTION IN LINE WITH A 1.5°C PATHWAY
BUSINESS INTEGRATION
RAISING AMBITION

SCIENCE BASED EMISSIONS REDUCTION IN LINE WITH A 1.5°C PATHWAY

Understanding Integration
Pursuing visibility over greenhouse gas (GHG) emissions across the value chain is key to informing low-carbon business models and product innovation. By leveraging digital technologies, such as the internet of things (IoT) and artificial intelligence (AI), companies can move from manual data entry to real-time monitoring and management of emissions sources. The World Economic Forum estimates that, when combined with other technologies such as 5G and AI, IoT could help cut global emissions by 15 per cent.

SBTi provides guidance and criteria for setting targets aligned with a 1.5°C pathway, as well as support for businesses to implement their target and report against it. SDG Ambition seeks to complement this guidance with a focus on designing business systems to advance the measurement and management of progress against a 1.5°C pathway.

Illustrations of Integration

**MANUFACTURING**
Monitoring the energy consumption of equipment using IoT and sensors pinpoints inefficiencies to reduce the energy intensity of the production process. Smart manufacturing, for example, is estimated to enable $11.9 billion in cost savings in 2030.19

**PRODUCT USE**
A deeper understanding of GHG emissions during the use phase enables product innovation to reduce lifecycle emissions. Unilever, after identifying 60 per cent of laundry detergent’s emissions occur in use phase, launched new products which enable people to wash their clothes at lower temperatures reducing associated GHG emissions by up to 50 per cent per load.20

Journey towards Integration
The advancement of digital technologies has encouraged a growing market of solutions to support richer insights on a company’s GHG emissions. Companies can work together with their technology partners to achieve outcomes such as:

**Automated carbon accounting and real-time action**
Leveraging digital tools to measure energy consumption across production in real-time and feeding that into carbon accounting calculations using advanced tools and algorithms. SAP Product Carbon Footprint Analytics, the first solution in their Climate 21 program, helps customers understand their carbon footprint and provides a foundation for analyzing and optimizing greenhouse gas emissions.**

**Engagement and influence over suppliers and customers**
Hardwiring GHG emissions reduction into material management and product innovation.

**Real-time carbon pathway analysis**
Creating analytics tools to intelligently and efficiently measure the business’ carbon pathway to identify changing investment requirements and possible carbon reduction opportunities.

* See more in SDG Ambition Integration Guide chapter on Preparing for Integration
** This technology is presented as an example and is not endorsed by SBTi.

<25% of companies report incorporating climate policy into overall company strategy21
67% of companies reporting to CDP as having an emissions reduction target disclosed sufficient data22
SDG AMBITION APPROACH

Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration. It does not present criteria for setting an SBT.

RAISING AMBITION

IDENTIFY RELEVANT BENCHMARKS BASED ON PRIORITIES

NEW GOAL IN LINE WITH BENCHMARK’S LEVEL OF AMBITION

GHG REDUCTION
Reduce GHG emissions produced by business activity through the value chain

- Assign financial value to emissions from business activity, to drive reductions e.g. Internal Carbon Price (ICP)
- Identify and target energy consumption savings and efficiency opportunities across the value chain
- Implement and track supplier GHG reduction strategies
- Increase share of low-carbon and renewable energy
- Identify opportunities to drive GHG reductions through products and services and/or in-house low-carbon offerings

GHG COMPENSATION
Abstract carbon from atmosphere through natural GHG removals and technologies to compensate for business emissions (excluding offsets)

- Mandate investment and strategies to scale natural carbon dioxide removal (e.g., afforestation, reforestation, soil carbon sequestration)
- Mandate investment and strategies to scale use of carbon capture and sequestration technology, and track volumes of carbon removed, stored and/or recycled

MANUFACTURING OPERATIONS & SAFETY

- Fundamental: Energy consumption (by fuel type, emissions type)
- Aspirational: Energy consumption by BU; Product; Activity

PROCUREMENT & SUPPLY CHAIN

- Fundamental: Market-based & location-based emissions
- Aspirational: Energy consumption by BU; Product; Activity, Market instrument

LOGISTICS, TRANSPORTATION & DISTRIBUTION

- Fundamental: Estimated upstream & downstream emissions
- Aspirational: Subdivided by Scope 3 activity (e.g., employee travel)

WASTE MANAGEMENT

- Fundamental: GHG removal by removal technology; Cost per tonne of GHG Removed
- Aspirational: Certification of removals

SALES & DISTRIBUTION MANAGEMENT

- Fundamental: Annual carbon emissions vs. annual removals
- Aspirational: Historical carbon emissions & historical net impact

ENVIRONMENTAL MANAGEMENT

STREAMLINING DIRECT EMISSIONS TRACKING
Business systems can ultimately be automated in order to calculate direct emissions in real-time, rather than relying on manual data entry.

MANAGING SUPPLIER PERFORMANCE
Greater engagement & transparency with suppliers through supply chain management tools and technologies.

LEVERAGE EXISTING DATA AND PROCESSES FOR SCOPE 3 EMISSIONS
Use existing data (e.g., product use logs) to appraise scope 3 emissions and build carbon intensity into data design.

FORECASTING & SCENARIO MODELLING FOR REMOVAL STRATEGY
Leveraging tech such as predictive analytics to map existing pathway, informing removal strategies & timing.

KDD1
How might you automate data collection for emissions calculations? Existing meters and data available in data historians can be leveraged to automate inputs into your emissions calculations. These data inputs will also inform how you configure your emissions calculations.

KDD2
How might you integrate with suppliers to improve visibility and emissions performance? Defining processes for visibility of supplier emissions data, moving towards automation. This can be done with third-party integration (e.g., sustainability rating agencies), or through direct data sharing from suppliers.

KDD3
How might you accurately measure scope 3 emissions? For a complete view of scope 3 emissions, it is important to understand the energy intensity of the materials used in product design, consumer use, and of your own internal operations (e.g., employee travel).

KDD4
How might you effectively forecast emissions to optimize removal investment? Setting up an ongoing, real time model for forecasting emissions helps identify gaps in achieving the 1.5°C pathway. This insight can help decision making on removal strategies based on the required GHG compensation.

All KPIs and metrics listed are directional, drawing on existing reporting standards.
Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.
Note: Approach under consultation with Science Based Targets initiative to ensure alignment.

SCIENCE BASED EMISSIONS REDUCTION IN LINE WITH A 1.5°C PATHWAY
BUSINESS SYSTEMS DESIGN

How might you automate data collection for emissions calculations?

Technologies such as IoT and sensors can be used to monitor GHG emissions in more efficient and impactful ways, from office energy use to smart manufacturing. Ericsson, in an effort to boost production efficiency at their Tallinn manufacturing site, implemented IoT, 5G and augmented reality to monitor the work environment and equipment. Not only did this enable a detailed sustainability impact analysis of the site, but also opened opportunities to increase efficiency by 25 per cent.23

Intermediary steps can be taken to streamline emissions tracking, such as designing financial system to track energy consumption invoices and moving to smart energy meters.

How might you integrate with suppliers to improve visibility and emissions performance?

Leading supplier management software tools support supplier emissions compliance and are able to integrate with third-party tools to collect, analyze and manage supplier sustainability data. Walmart, working to reduce one gigaton of greenhouse gases from their supply chain by 2030, encourages suppliers to participate in THESIS, a third-party program that benchmarks suppliers, tracks performance and identifies opportunities for improvement.24

Companies of all sizes can embed requirements in the procurement process, striving for a chain of custody over carbon emissions where supplies you buy come with carbon data associated that can then be provided to customers. In the long-term, large organizations can strive to leverage blockchain or cloud technologies to automate this process.

How might you accurately measure scope 3 emissions?

Calculating non-direct carbon emissions, such as product use and treatment at end of life, remains a complex task for companies. A first step involves defining the calculation method to estimate emissions, such as by leveraging sales records and survey data on consumer behaviors.

Companies should strive for more intelligent data collection and calculation by increasing data flows between businesses, products and customers. For example, one technology company uses IoT-connected printers to monitor customer consumption and automatically send ink when they are running low, illustrating the opportunities for deeper customer interaction.

How might you effectively forecast emissions to optimize removal investment?

Companies can calculate their GHG emissions pathway to 2030 today using excel-based modelling tools provided by the SBTi (e.g. target-setting tool). Understanding the level of reductions needed to 2030 to align with a 1.5°C pathway is critical to strategic planning to achieve the benchmark. Scenario analysis, for example, enables companies to understand the risks associated with various GHG reduction scenarios, and test its investment opportunities against these scenarios to support capital allocation prioritization.25

These tools often rely on manual data entry. Companies should engage their technology partners on the optimization and automation of scenario analysis, leveraging advanced analytics tools to provide real-time forecasts and opportunity identification.

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100% RESOURCE RECOVERY, WITH ALL MATERIALS AND PRODUCTS RECOVERED AND RECYCLED OR REUSED AT END OF USE

**Benchmark Information**

This benchmark calls for extending responsibility over materials and products downstream in the value chain to ensure they are recovered and recycled or reused in practice. Companies can drive product and material recovery by introducing new circular business models and customer incentives (including product-as-a-service and takeback), building industry ecosystems for reverse logistics and secondary markets, and investing in new capabilities, such as asset tracking or material recycling. This benchmark applies to company products and services as well as the value chain. The timeline to achieve 100 per cent resource recovery is set by the Agenda for Sustainable Development as 2030.

**Assessing Against the Benchmark**

Performance against the benchmark — percentage of sustainable inputs by the year 2030 — can be assessed in line with the targets identified in SDGs 12 and 14, the Ocean Conservancy’s Plastics Policy Playbook, and the global Plastics Pact initiative. Committing to this benchmark will support many SDGs, including Goal 14: Life Below Water. Businesses that have not established goals in line with achieving 100 per cent sustainable inputs by 2030 in line with Agenda 2030 would fall below the SDG Ambition Benchmark.

**Illustrative Industry Impact**

**Technology & Telecommunications:** 50M tons of E-waste are created each year, valued at more than $60B. A significant value opportunity can be captured from industry initiatives with the establishment of an efficient reverse-logistics infrastructure to enable takeback, reuse, refurbishment, and recycling.

**Mining:** More than 50 per cent of steel in the United States is recycled. Recovery, reprocessing and reuse of metals will have an impact in addition to the metals value chain as recovered materials increasingly become standard. Mining companies can use their smelting capacity to take on secondary materials and build better market and downstream collaboration.

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20% of e-waste is reused or recycled appropriately.

1% of clothing is recycled back into clothing, 73 per cent goes to landfill.

$600B projected size of reverse logistics market.

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**Business Impact on Resource Recovery**

Today, the majority of materials and products are not recovered, reused or recycled; instead, they are discarded. Globally, for example, 14 per cent of plastics are collected for recycling and only 2 per cent enter closed loop recycling streams. Large quantities of this packaging end up in the ocean; unless urgent action is taken, more than 250 million tons of plastic will be found in marine systems by 2025.

Models for extended material use and recovery also offer opportunities for business improvement. By some estimates, reuse as a pathway for raw material recovery could lead to savings as high as 25 to 50 per cent. The Ellen Macarthur Foundation (EMF) brings together business, innovators, cities and governments, universities, and thought leaders on circular economy topics. It counts over 130 companies as members.
Business Value

Product as a service business models present an opportunity for increased revenue from new business models, accessing new customers and new markets. Resource recovery allows companies to reduce supplier costs over time. One global industrial company has preserved 170M pounds of materials through their component return and remanufacture initiative. Many governments across the globe, including China and the European Union, are beginning to implement extended producer responsibility regulation; adopters of these practices will benefit from reduced risk of escalating costs in an evolving regulatory environment.

PRELIMINARY ACTIONS

Identify relevant methods of recovery:
Conduct a life cycle assessment to determine how materials and products can be recovered and whether reuse or recycling is most appropriate.

Data management and secondary markets:
Develop capabilities to collate the right data throughout the lifecycle of the product to introduce targeted interventions, understand additional materials and identify secondary markets.

Employee and consumer engagement:
Enhance awareness and knowledge about the value of “take-back” programs among consumers to increase effectiveness and among employees to structure within their performance metrics.

KEY RESOURCES

- Ocean Conservancy Plastics Policy Playbook
- The Circular Economy Handbook
- Ellen MacArthur Foundation
- Platform for Accelerating the Circular Economy
- World Resources Institute

COMPANIES TAKING ACTION

**VEOLIA**
helps clients manage waste and recover value. 60 per cent of the company’s circular economy revenue is attributed to recycling and material recovery. In partnership with Selfridges, a British department store, Veolia recycled fibers from used coffee cups into shopping bags, tripling recycle rates from 15 per cent to 55 per cent and reaching 100 per cent diversion from landfill.

**PHILIPS**
is committed to fully close the loop on all large medical equipment systems, pledging to take back and re-purpose all the large medical systems that its customers are prepared to return to it. In 2019 Philips made 13% of all revenue from circular products and services.

**ARCELORMITTAL**
runs a steel sheet pile rental service for their customers. The product retains its intrinsic properties for multiple uses and a single sheet pile can be re-used up to 10 times before being recycled.
BUSINESS INTEGRATION

RAISING AMBITION

Journey towards Integration

Companies can engage with technology partners to design business systems that support data flows for materials after sale. In doing so, companies can achieve:

- **Designs for recyclability**
  Understanding specific requirements for recycling materials in products to inform product design decisions and increase resource recovery.

- **New customer propositions**
  Product-as-a-service and product-life-extension models rely on new interactions with the customer, underpinned by innovative systems of measuring and managing product use.

- **Reverse logistics**
  Building systems to underpin sophisticated networks of partners to collect products at end of life and return to facilities for resource recovery.

Illustrations of Integration

**CLOSED LOOP SUPPLY CHAINS**

By designing systems that can support collection programs and reverse logistics processes companies can unlock opportunities to re-input materials from their products into their own supply chain, saving on both materials and costs. Apple uses its international Trade-In program to give new life to iPhones. Pursuing higher rates of resource recovery, Apple developed recycling robots Liam, Daisy and now Dave, to disassemble devices in order to recover precious metals that can then be used to manufacture new devices.12

**DIGITAL TRACKING**

Certain industries are seeing innovative applications of tracking technologies in order to trace materials following use. Start-up EON, for example, is working with leading brands in the fashion industry on The CircularID Protocol which gives every product a unique digital profile making it possible for companies to scale the reuse and recovery of products and materials.13

C-SUITE OWNERSHIP

Chief Innovation Officer

INTEGRATION COMPLEXITY*

Understanding Integration

In the linear economic model there has been limited pressure for companies in most industries to measure and track product and packaging after the point of sale. As companies embed the circular economy into core business strategy and culture, they must assess their material flows and how they can recover products to recapture value. In order to recover 100 per cent of the materials produced, leaders must innovate fundamentally new ways of doing business, leveraging technologies to enable new relationships with customers, partners and their products. New and promising applications of digital technologies, such as RFID, blockchain and digital twinning are enabling businesses to track materials after sale in ways previously not possible in business to consumer models. Matching raised ambition on resource recovery with increased innovation for new processes built on core business systems is key for providing the data flows that enable these new models and customer propositions.

100% RESOURCE RECOVERY, WITH ALL MATERIALS AND PRODUCTS RECOVERED AND RECYCLED OR REUSED AT END OF USE

* See more in SDG Ambition Integration Guide chapter on Preparing for Integration
SDG AMBITION APPROACH
Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

RAISING AMBITION
IDENTIFY RELEVANT BENCHMARKS BASED ON PRIORITIES
NEW GOAL IN LINE WITH BENCHMARK’S LEVEL OF AMBITION

PRODUCT ASSESSMENT
Embedding requirements for product and service design to enable recovery, recycling and re-use at end of product use

- Implement product design criteria that require the use of recyclable and renewable materials
- Mandate recyclability assessments of products/services to test ability for end-of-life sorting, processing and recovery

NEW BUSINESS MODELS
Develop new offerings that increase control over product and packaging recovery

- Grow product-as-a-service (PaaS) business offerings, such as leasing and rental in place of one-time purchases for easy return and recycling
- Grow product and service offerings for remanufacture and repair, tracking product ownership, use and lifecycles

COLLECTION & RECYCLING
Re-capture re-usable materials for recycling & re-introduction into supply chain

- Develop reverse supply chain capability, e.g. leveraging big data and mapping technology to enable return of materials
- Implement sales and customer incentives to increase product recovery at end of-use
- Develop recycling infrastructure for collecting and sorting returned material

Incorporate recyclability assessments and criteria into product and packaging design to ensure materials are recoverable and reusable at end of product use.

Example actions:
- Increase in renewable and recyclable inputs by product
- Increase in revenue from circular models
- Increase in product collection and recycling

Key Design Decisions (KDD)
- KDD1: How might you prioritize recyclability in product and packaging design and material selection?
- KDD2: How might resource recovery be embedded into customer propositions?
- KDD3: How might you enable the highest value re-capture from material recovery and recycling?

Network for Return, Processing and Recycling
Integration of retailers and service providers in reverse logistics or recycling enables an end-to-end material recovery solution for end-of-use products.

New Customer Interactions
Deepening relationships with customers to understand product consumption and material flows, unlocking new revenue streams.

Metrics:
- Fundamental: Materials that are used to produce and package products; Total renewable materials by product
- Aspirational: Product recyclability assessment; Product material inputs which are unrecoverable
- Fundamental: Revenue generated per business model; Product recovery per business model; Product lifecycle by product type
- Aspirational: Customer conversion to new offering; Customer churn by offering type
- Fundamental: Total material collected and recycled; Collection sites and programs by type; Closed loop recycling
- Aspirational: Material recovery divided by next use; Net-energy from recycling; Net-cost from recycling

Business Integration
100% RESOURCE RECOVERY, WITH ALL MATERIALS AND PRODUCTS RECOVERED AND RECYCLED OR REUSED AT END OF USE

All KPIs and metrics listed are directional, drawing on existing reporting standards. Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.
How might you prioritize recyclability in product and packaging design and material selection?

A number of factors impact the recoverability of a product such as material inputs, ease of disassembly, and existing recycling infrastructure. To assess products and packaging for impact in view of resource recovery requires combinations of proprietary materials data and external data sources to be integrated into your internal corporate materials database. There are new, evolving tools which can support this, such as the Materials Circularity Indicator (MCI) tool developed by Ellen MacArthur Foundation and Granta Design.

Businesses should design core business systems — such as material management and product lifecycle management software — to integrate this data, tagging material and product attributes according to circularity. This enables the prioritization of certain materials and designs, as well as the ability to set targets and criteria for resource recovery.

How might resource recovery be embedded into customer propositions?

Resource recovery depends on business models that allow for outputs to return to the company for reuse. Companies can strive for innovation in their product and service offerings by incorporating technologies focused on visibility of material use after the point of sale. New opportunities to enable data flows between supplier and customer, through innovations such as connected devices, can support companies as they strive to recover materials or prolong product lifecycles.

Caterpillar, for example, has developed maintenance technology which enables their customers to monitor equipment health and performance. The technology automatically identifies potential problems and can connect customers with local dealers for servicing. This, in partnership with other offerings around repair and remanufacture, enables the extension of product life-cycles, while cutting costs for the customer and opening revenue streams.16

How might you enable the highest value re-capture from material recovery and recycling?

To make resource recovery possible for many materials, companies need to build a network across the value chain that can support reverse material flows as well as sorting and processing for recycling. Some companies may be able to call on their current software solutions to support this. For example, returns management company ZigZag added “TakeBack” functionality to their platform enabling fashion retailers to offer recycling and resale options for returns.37

Beyond customer returns, crucial barriers to resource recovery exist in systems to sort and process materials for recycling. Jaguar Land Rover is investing in the circular economy through its “REALITY” project, partnering with Axiom to integrate advanced sensor technology into a closed loop process that enables aluminium from scrap vehicles to be re-introduced into the production line.15 Companies should aspire to design systems that can manage these partnerships and new processes for material recovery, gaining a greater understanding of the resources they recover from products and how they can optimize their re-introduction into the value chain.
BENCHMARK

LAND DEGRADATION NEUTRALITY INCLUDING ZERO DEFORESTATION

Benchmark Information

This benchmark — land degradation neutrality including zero deforestation — promotes land preservation practices to counter the impact of their business activities. Land degradation neutrality (LDN) is defined as "a state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remains stable or increases within specified temporal and spatial scales and ecosystems." Zero deforestation principles allow for conversion of forests at an equal area of replantation. The benchmark helps businesses maintain or enhance their land-based natural capital and its associated ecosystem services.

Deforestation threatens the survival of over 80 per cent of all terrestrial species of flora and fauna in forests while also contributing as much as 15 per cent of global CO2 emissions. The benchmark encourages business to map their land impact and leverage innovative practices to curb land and habitat loss as a direct result of business activity in operations, products and services, and along the value chain. The timeline to achieve land degradation neutrality including zero deforestation is set by the Agenda for Sustainable Development as 2030.

Illustrative Industry Impact

**Agriculture:** Agricultural production accounts for 80 per cent of tropical and subtropical deforestation. To safeguard existing forests, companies need to develop alternative means of agricultural production, increase efficiency and run compliance programs across their supply chains that involve small producers, local communities, and other stakeholders.

**Mining:** Mining-related forest loss caused roughly 10 per cent of all Amazon deforestation between 2005 and 2015, with deforestation often occurring off-site to enable construction of related infrastructure. Mining companies operating in forested regions should commit to eliminating deforestation and adapting techniques such as forest landscape restoration to lessen the impact of their operations.

BUSINESS IMPACT ON DEFORESTATION

While natural causes such as wildfires and small-scale firewood collection play a part in the overall loss, business activity is the top contributor to deforestation and associated land and habitat loss. In fact, deforestation is accelerating in many regions. Multiple initiatives are working in partnership with the private sector to combat land degradation. The Roundtable on Sustainable Palm Oil has more than 4,000 members working to develop global standards for palm oil cultivation; which led to the loss of 31 million hectares of forests in 2016 in Indonesia alone. Similarly, 12 forestry-centric companies, together with the World Business Council for Sustainable Development (WBCSD), launched Forest Solutions Group, a global platform for the forest sector value chain.

7K M² of tree cover are lost each second, nearly 25M hectares each year.

8% of global emissions currently come from tree cover loss in tropical forests; these same forests can provide 23 per cent of climate mitigation needed before 2030.

75B tons of soil are lost from arable land each year and an estimated $400 billion in agricultural production is lost.
Assessing Against the Benchmark

Performance on the benchmark — achieving land degradation neutrality including zero deforestation by 2030 — can be assessed in line with guidance provided by the United Nations Convention to Combat Desertification (UNCCD), the sole legally binding international agreement linking environment and development to sustainable land management. Few businesses today — just 21 per cent — have prioritized SDG 15, “Life on Land” in their sustainability strategy despite sustainable forestry management and soil health or regenerative management practices being critical to business. Businesses that are not currently on track to achieve land degradation neutrality including zero deforestation by 2030 would fall under the SDG Ambition Benchmark.

Business Value

Participation in initiatives such as Zero Deforestation Zones could reduce monitoring costs and enable premium pricing for companies along the supply chain. Working towards zero deforestation can also reduce the risk of penalties and fines. In 2018, one South American country levied $29 million in fines for various deforestation offences. Additionally, according to CDP, up to $906 billion in annual corporate turnover is at risk because of deforestation.

Preliminary Actions

Mapping business activities and monitoring forest deforestation and land degradation: Identify the commodities used in your operations and the extent of their impact on deforestation for the entire supply chain. Identify and classify the areas in which the deforestation is occurring, for example as high or low-risk regions.

Use certifications as frameworks: Determine the various legal and other certifications such as FSC and PEFC that the company would benefit from and use the metrics of those certifications as frameworks to develop your target. Companies can connect the goals of zero deforestation with the overall climate goals of the company.

Key Resources

- WWF
- WRI Global Forest Watch
- Forest Stewardship Council
- FAO
Satellite and geospatial mapping, paired with machine learning and analytics, are increasingly used to trace suppliers and areas of activity, enabling the collection of land data in remote areas. Publicly available platforms such as Trends.Earth; Farm-trace; and Global Forest Watch leverage these technologies to provide companies, NGOs and governments with data on land impact to inform supplier engagement strategies. Partnerships such as the SUSTAIN consortium use distributed ledger technologies to address commodity-level supply chain challenges.

Illustrations of Integration

**SUPPLY CHAIN TRACEABILITY**

Satellite and geospatial mapping, paired with machine learning and analytics, are increasingly used to trace suppliers and areas of activity, enabling the collection of land data in remote areas. Publicly available platforms such as Trends.Earth; Farm-trace; and Global Forest Watch leverage these technologies to provide companies, NGOs and governments with data on land impact to inform supplier engagement strategies. Partnerships such as the SUSTAIN consortium use distributed ledger technologies to address commodity-level supply chain challenges.

**MEASURING RESTORATION**

Effective restoration strategies require accurate and up-to-date information regarding land health and progress over long periods of time. Mining company Anglo American partnered with Emapper, a technology company that uses drones to photograph land and artificial intelligence to analyze the environmental conditions. This has enabled them to undertake landscape scale assessments of erosion, weed invasion and plant cover more safely, cheaply and quickly, resulting in the development of detailed rehabilitation plans for their mine sites.

77% of 1,500 companies active in commodities such as timber, palm oil, cattle and soy do not disclose their impact on global forest loss.

* See more in SDG Ambition Integration Guide chapter on Preparing for Integration
SDG AMBITION APPROACH
Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

### RAISING AMBITION

<table>
<thead>
<tr>
<th>AVOID</th>
<th>REDUCE</th>
<th>RESTORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliminate deforestation and prevent land conversion and degradation</td>
<td>Reduce or mitigate land conversion or negative impacts on habitat</td>
<td>Reclaim area of land that was affected by operational activities and restore the environment</td>
</tr>
<tr>
<td>Implement a zero deforestation policy</td>
<td>Assess the physical, biological and economic impact of product per acre of land</td>
<td>Establish plans for next use of land (e.g. usage after land closure in mining)</td>
</tr>
<tr>
<td>Restrict activities that cause land degradation across direct operations and supply chain (e.g. sourcing criteria)</td>
<td>Establish management practices to mitigate land degradation impacts</td>
<td>Track restoration of land (e.g. soil health, fertility, biodiversity)</td>
</tr>
<tr>
<td>Deploy solutions for predictive land use planning, track land impact (e.g. scenario models)</td>
<td>Encourage and incentivize suppliers to address and mitigate (land degradation impacts)</td>
<td>Leverage latest technology (e.g. big data, remote monitoring, drone imagery) to assess quality of land and natural capital</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Decrease in land used or affected</strong></th>
<th><strong>Increase of land employing land-positive practices</strong></th>
<th><strong>Increase of land restored vs. degraded</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamental: Hectares of land managed; Rate of deforestation in protected areas;</td>
<td>Fundamental: Land positive practices and land use; percent suppliers employing land management</td>
<td>Fundamental: Size/location of habitats restored; Proportion disturbed to restored land; Restoration by third-party approval</td>
</tr>
<tr>
<td>Aspirational: Land productivity, nutrition &amp; pesticides profiles; Biodiversity capital (flora and fauna)</td>
<td>Aspirational: Soil health across value chain</td>
<td>Aspirational: Biodiversity impacts; Green cover net impact; Valued societal impact of used land</td>
</tr>
</tbody>
</table>

### METRICS

<table>
<thead>
<tr>
<th>MANUFACTURING OPERATIONS &amp; SAFETY</th>
<th>PROCUREMENT &amp; SUPPLY CHAIN</th>
<th>LOGISTICS, TRANSPORTATION &amp; DISTRIBUTION</th>
<th>WASTE MANAGEMENT</th>
<th>SALES &amp; DISTRIBUTION MANAGEMENT</th>
<th>ENVIRONMENTAL MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>DETAILED LAND IMPACT ANALYSIS</td>
<td>IDENTIFYING MAIN SOURCES OF LAND IMPACT IN PRODUCTS &amp; PRODUCTION PROCESS</td>
<td>SUPPLIER INTEGRATION AND TRACEABILITY</td>
<td>FORECASTING LAND IMPACT AND MONITORING IMPACT OF RESTORATION ACTIVITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software tools and technologies (e.g. land information systems, geographical information systems) can support environmental analysis.</td>
<td>Product assessment tools (e.g. LCA) can analyze environmental impacts based on production process and material inputs.</td>
<td>Driving efficient data flows with suppliers of land impacts associated with their products. Third party tools and land mapping technologies support traceability and auditing.</td>
<td>Embed restoration in the planning process for new sites and facilities by forecasting impact of activities.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### KEY DESIGN DECISIONS (KDD)

- **KDD1**: How might you integrate advanced technologies and third party data sets to understand and monitor land impacts? Data can be incorporated from third party sources (e.g. GIS layers and data) to provide a more robust picture of aspects such as soil health in areas of business operations.
- **KDD2**: How might you integrate land impact considerations into all aspects of the business? Land impact assessments and attributes need to be available across all sourced materials to drive decision making to minimize land impacts based on product composition and material inputs.
- **KDD3**: How might you integrate with suppliers and third-parties to ensure traceability of land impacts in your supply chain? Define process for supplier provision of land impact data and engage with individual suppliers on measures to improve visibility over practices (e.g. supplier improvement programs).
- **KDD4**: How might you evaluate opportunities for restoration and use advanced technologies to monitor progress? The use of tools, such as satellite or drone imaging, can be employed to monitor and track restoration/rehabilitation progress, especially in remote areas.

*All KPIs and metrics listed are directional, drawing on existing reporting standards. Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.*
BUSINESS INTEGRATION RAISING AMBITION

BUSINESS SYSTEM DESIGN

How might you integrate advanced technologies and third party data sets to understand and monitor land impacts?

Systems based on historical data and imagery, such as geographical information system (GIS) and remote sensing (RS), can help measure land degradation over time by tracking indicators such as soil health. This offers deep insight into the land properties and the change over time in areas of business activity.

By understanding what land data is available in the public sphere as well as private sector solutions, companies can make informed decisions about how to source and compile the outstanding data needs. Understanding these technologies is also useful when determining setup of data collection focused on the company’s own land use; the ability to connect a public data set with internal information on operations will support subsequent efforts to understand the company’s impact.

How might you integrate land impact considerations into all aspects of the business?

Land impact assessments are a way for businesses to drive more sustainable decision-making. Life cycle assessments (LCAs) and Material Flow Analysis are two examples of a methodology for performing a land impact assessment, with the goal of eliminating negative impacts through land considerations being embedded in planning processes.

Analytics-enabled software tools streamline these assessments and enable them for large data sets. Integrating these into core systems enables the consideration of these attributes alongside other business measure of success. This allows leaders to understand the costs and benefits of shifting a process to be less land intensive, or to identify a previously unconsidered positive impact of a land-related decision.

How might you integrate with suppliers and third-parties to ensure traceability of land impacts in your supply chain?

Understanding and improving your suppliers land impacts is crucial to achieving this benchmark. Internal processes can be defined for the suppliers for the provision of the land impact data. While transitioning suppliers to sharing increased information may take time, publicly available data can be used as a starting point or proxy.

Digital tools from third-parties, such as the World Resources Institute (WRI) and World Wildlife Fund (WWF), can support companies in assessing risks for land impact in supply chains, enabling alerts for companies. Companies themselves can then employ and integrate GIS and RS to conduct digital audits, holding suppliers to account and creating as complete a picture of their land impacts as possible.

How might you evaluate opportunities for restoration and use advanced technologies to monitor progress?

Achieving land degradation neutrality requires maintenance or enhancement of land in use. However, opportunities for restoration of land already impacted by business activity is crucial, for many industries including energy, agriculture and mining.

Creating a comprehensive picture of your current state allows companies to strategically plan for restoration, providing a platform to then monitor progress on key restoration programs. Capabilities in GIS or drone imaging for assessment and traceability can be utilized to monitor progress on an on-going basis.

1 UN Convention to Combat Desertification
2 Deforestation and Forest Degradation, World Wildlife Fund
3 Cutting Deforestation Out of Palm Oil: Company Scorecard, Greenpeace, 2016
4 Tree Loss, Bloomberg, 2019
5 By the Numbers: The Value of Tropical Forests in the Climate Change Equation, World Resources Institute, 2018
6 Global Soil Partnership, FAO
7 Yale University Global Forest Atlas
8 New Amazon Threat? Deforestation from mining, Gund Institute for Environment
9 Natura
10 Achieving zero deforestation, L’Oreal
11 Tesco announces its plan for zero deforestation soy, Consumer Goods Forum, 2018
12 UN Convention to Combat Desertification
13 Deforestation: A business-critical issue for the world’s biggest buyers, CDP, 2017
15 “$29 million deforestation fines: game changer for Brazilian soy trade?” Mongabay, 2018
16 Deforestation: A business-critical issue for the world’s biggest buyers, CDP, 2017
17 Nearly 450 companies pledged to end deforestation by 2020.
18 The Money Trees: The role of corporate action in the fight against deforestation, CDP, 2019
19 Sustainability Assurance & Innovation Alliance
20 Anglo American Sustainability Report 2019
21 The Money Trees, CDP, 2019
BENCHMARK

ZERO INCIDENCES OF BRIBERY

Benchmark Information

The zero incidences of bribery benchmark helps organizations eradicate and prevent instances of corruption and bribery, including any behaviors that abuse entrusted power for private gain. The benchmark helps address practices that raise compliance and reputational risks, reduce overall consumer trust and impact the bottom line. In addition to strict policies and procedures, management systems calibrated to identify and prevent corruption can greatly reduce overall incidents of bribery. At a minimum, companies must set targets to eradicate incidents of bribery within their direct operations as soon as possible with longer-term goals to target incidents of bribery across the value chain by 2030.

Corruption encompasses a wide range of activities that includes bribery as an important subset. In addition to impeding economic growth as well as distorting market competition, bribery has a disproportionate impact on individuals in poor communities who pay as high as 13 per cent of their income in bribes according to the World Bank.

Illustrative Industry Impact

Infrastructure and Construction:
The infrastructure and real-estate industry could lose over $6 trillion between 2020–2030 due to incidents of corruption, including bribery. Global construction output is expected to grow to approximately $17.5 trillion annually by the year 2030, indicating corruption losses could total about 34 per cent of growth in that period.

Financial Services:
In the decade since the financial crisis, banks have paid more than $300 billion in fines, regulatory settlements and associated legal costs; more than 40 per cent of their “pre loss” earnings. While many institutions have focused on building a tightly controlled compliance culture since, companies need to invest more in the drivers of ethical and responsible decision-making to prevent future ethical lapses.

BUSINESS IMPACT ON BRIBERY

The UN Global Compact has nearly a decade of experience in Anti-Corruption Collective Action. The 10th Principle of the UN Global Compact commits business to work against corruption in all its forms, including extortion and bribery. Companies must join Governments, the UN, civil society and other relevant stakeholders to realize a bribery-free and more transparent global economy through collective action. In 2019 with funding from the Siemens Integrity Initiative, the UN Global Compact launched the four-year project Scaling up Anti-Corruption Collective Action within Global Compact Local Networks to support collective actions from Global Compact Local Networks and promote public-private cooperation in fighting corruption.

- $3.6T lost to bribes and stolen money annually

- 43/100 the average country score across 180 nations on the Corruption Perceptions Index

- -12% in zero-tolerance corruption policies to 51 per cent among UNGC participants from 2018–2019
Assessing Against the Benchmark

Performance on the benchmark — achieving zero incidences of bribery — can be assessed in line with the objectives of the United Nations Convention against Corruption (2005), the UN Global Compact’s 10th Principle and OECD’s Convention on Combating Bribery of Foreign Public Officials in International Business Transactions. Research by the UN Global Compact indicates that only 25 per cent of companies conduct anti-corruption assessments today.10 Forensic data analytics can help improve the detection and investigation of bribery incidents, along with identifying gaps in internal controls. Businesses that have not established clear whistleblower protections, independent due diligence mechanisms, transparent contracting procedures or identified systems opportunities to combat bribery by 2030 would fall below the SDG Ambition Benchmark.

Business Value

In addition to exacerbating social inequalities, cases of bribery tarnish brand image. A study of 25,000 global consumers found that, of customers who switched companies in the past year, 46 per cent did so because they lost trust in the company.11 Ethical conduct can also save expenditure on settlements and penalties: In 2019, a global retailer paid nearly $300 million in fines in the United States for allegedly allowing subsidiaries to employ third-party intermediaries who paid bribes.12

PRELIMINARY ACTIONS

Demonstrate commitment by establishing strong policies: Set a zero-tolerance policy against the use of manipulation, illegal conduct (e.g. bribery, misrepresentation) and establish corrective procedures for such conduct to show employers, suppliers, and customers that you have a zero-tolerance policy. Employee and business partner training on policies is imperative.

Establish anti-bribery management systems: Develop robust systems based on a properly documented bribery risk assessment, reviewed on a regular basis and designed to prevent and detect bribery risk to the company.

Implement standardized and automatic procedures: Establish automated employee background clearance including immigration or visa status and past criminal records. Develop standardized models or guidelines (e.g. licenses and contract terms).

KEY RESOURCES

- UNGC Anti-corruption
- UNGC Anti-corruption risk assessment
- OECD Anti-corruption and Integrity Hub
Journey towards Integration

The development of technological solutions in curbing corruption and bribery has empowered companies to track instances predictively and in real-time rather than only identifying breaches retrospectively. In collaboration with technology partners, companies can strengthen:

Automation of risk monitoring and predictive action

Risk analytics can be automated to flag types of transactions such as payments to public officials, suppliers, and frequency in high-risk regions with pattern recognition and machine learning capabilities to bolster risk comprehension.

Employee engagement

Central learning systems can track and encourage employee engagement with anti-bribery training programs, while also deriving key insights from employee interaction to develop future modules.

Continuous learning

Ability to reframe anti-bribery and corruption policies, disciplinary procedures, and whistleblower protections based on data driven insights from digital monitoring and workforce ethics assessments.

Illustrations of Integration

REAL-TIME MONITORING

Monitoring and tracking analytics tools can enable real-time management of bribery. These forensic tools go beyond flagging compliance breaches (such as building risk reports and collating audit trails) to actively identifying anomalies in historical and pending transactions. Third-party tools such as the Corruption Perception Index can assist this mapping by providing scores for regions with higher risks of bribery. More companies are capitalizing on these technologies, with 84 per cent of respondents to AlixPartners 2019 Anticorruption Survey reporting that they monitor suspicious behavior in real time, up approximately 15 per cent over the prior year.

ADAPTIVE LEARNING AND IMPROVED SENSITIZATION

When it comes to bribery, the costs of poor training are high. Forbes estimates that 10 per cent of all corporate learning is effective. Companies can improve learning among employees by leveraging intelligent learning systems that encourage engagement with training and which provide insights into existing levels of employee comprehension.

90% of matters alleging bribery in the United States are related to the use of third-party intermediaries.
## SDG AMBITION APPROACH

Example detail below follows the approach outlined in the SDG Ambition Integration Guide and supports ideation for benchmark integration.

### RAISING AMBITION

#### BUSINESS INTEGRATION

<table>
<thead>
<tr>
<th>KDD1</th>
<th>KDD2</th>
<th>KDD3</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVERAGE YOUR RISK CATALOGUE TO AUTOMATE EARLY DETECTION</td>
<td>ASSIGNMENT AND TRACKING OF ANTI-BRIBERY TRAINING</td>
<td>APPLY MACHINE LEARNING FOR CONTINUOUS IMPROVEMENT</td>
</tr>
<tr>
<td>Develop a robust risk catalogue and profile around bribery, which can be used to automate monitoring across the organization.</td>
<td>Automate the assignment of anti-bribery training with the ability to differentiate this sub-group of “Ethics &amp; Compliance” training from other areas.</td>
<td>Tools such as machine learning can be applied in the evaluation of data sets, such as bribery incident data, to uncover previously unknown trends or commonalities.</td>
</tr>
</tbody>
</table>

#### RISK ASSESSMENT

**Define specific company risks and review current practices**

- Establish regular reviews of risks and existing processes
- Develop an anti-bribery program and integrate into organizational structure, assigning responsibilities
- Review ability of service functions to support zero bribery policy / program

**Mitigation of bribery risks**

- Fundamental: Operations assessed for risk: Total risks identified and mitigated
- Aspirational: Total risks identified before completion of transaction

#### SENSITIZATION

**Run training courses and implementation program to make all employees aware of the company policy**

- Communicate anti-bribery policy and program internally and externally
- Run training courses for all employees and business partners
- Obtain commitments from all employees and leadership to zero bribery

**Employees & business partners trained**

- Fundamental: Stakeholders trained in anti-bribery subdivided by group (e.g. board; employee level, business partner)
- Aspirational: Total employees and suppliers who understand policy

#### ENFORCEMENT & COMPLIANCE

**Reporting of incidents and auditing of reports, with documented remediation and disciplinary procedures**

- Develop whistleblowing channels for raising issues (internally and externally)
- Establish disciplinary procedures and track incidents and response
- Capture knowledge from incidents and report, including third-party audit

**Reduction in confirmed incidents**

- Fundamental: Incidents by outcome (e.g. dismissal;) and by responsible party (supplier, employee); Total cost of breaches
- Aspirational: Total whistleblowing reports actioned

### METRICS

**All KPIs and metrics listed are directional, drawing on existing reporting standards. Each organization should adopt goal-setting measures aligned to their reporting methodologies and business context.**

#### LEVERAGE YOUR RISK CATALOGUE TO AUTOMATE EARLY DETECTION

- How might you leverage your compliance risk data to automate the flagging and escalation of potential instances of bribery? Compliance risk data can be used to categorize and flag potential compliance issues, and AI can be implemented to monitor and analyze transactions or expenses for potential cases of bribery or non-compliance.

#### ASSIGNMENT AND TRACKING OF ANTI-BRIBERY TRAINING

- How might you automate your learning management system in assigning anti-bribery training and tracking completions? Having a mechanism to automatically assign anti-bribery trainings to individuals at all levels within the organization, as well as automating assignment of refresher courses at defined intervals.

#### APPLY MACHINE LEARNING FOR CONTINUOUS IMPROVEMENT

- How might you leverage data related to recorded instances of bribery to better prevent future occurrences? Information and data captured when incidents of bribery occur can be used to help your organization uncover additional factors that can lead to occurrences of bribery.
How might you leverage your compliance risk data to automate the flagging and escalation of potential instances of bribery?

Operating in a global environment and with a high volume of daily transactions, automation of compliance monitoring can help ease the burden of manual inquiries, which can enable your business to proactively perform due diligence on transactions, partnerships or agreements that are flagged as high risk. This automated monitoring can equip your anti-bribery team with relevant data elements to support their investigation into potential bribery cases. Continuous monitoring solutions can process large volumes of expenses and accounts payable, flagging transactions where a vendor may be on a sanctioned list or transactions in high risk countries.

In instances where an organization may not be equipped to build, manage and apply their own anti-bribery risk catalog, third-party solutions are available that can provide varying degrees of analysis and monitoring based on an organization’s specific needs.

How might you automate your learning management system in assigning anti-bribery training and tracking completions?

A critical component to any anti-corruption program is proper communication and training of all members of an organization, including board members. These anti-bribery trainings should have completion deadlines and reporting solutions put in place to provide real-time visibility into training completion compliance.

When building and maintaining anti-bribery training internally is not an option, there are numerous third-party providers that provide up-to-date interactive training content, as well as self-assessment and self-declaration tools. Content from such providers can be accessed via software-as-a-service solutions or integrated with an organization’s existing learning management system.

How might you leverage data related to recorded instances of bribery to better prevent future occurrences?

As an organization monitors and investigates potential instances of bribery, an informational feedback loop should be built into key systems. When instances of bribery or non-compliance are identified, machine learning can be used to identify trends and contributing factors, which then can be used to strengthen the risk catalog or identify additional needs regarding training and sensitization. In this way, an organization can design for continuous improvement and better enhance their monitoring capabilities to proactively identify and stop potential instances of bribery.

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6 Corruption Perceptions Index 2019, Transparency International
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8 Working together to prevent corruption, S3M, 2019
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12 “Walmart to pay $283 mn fine in US over bribery charges in India, other countries,” Mint, 2019
13 Four ways to use data analytics to identify corruption red flags, Tableau, 2019
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