How circularity translates into nonfinancial reporting

As stakeholders demand action, circular economy reporting frameworks and communication strategies are evolving

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1. Introduction

Today's linear economic model strains our planet's resources like never before – and will grow more destructive as the middle class grows in emerging economies. At the current rate, the global population "consumes 100b tons of materials per year and wastes over 90%,"[1] resulting in billions of dollars of economic losses. Currently, only 8.6% of materials are recovered and make their way back to the economy.[2] Regulators, investors and consumers are increasingly taking note and asking what companies are doing to reduce their environmental impact.

One solution is the circular economy (CE) model, which uses materials more efficiently, minimizes waste and regenerates nature, decoupling economic growth from its negative ecological impacts. CE approaches can range from transition to sustainable materials, business models such as product as a service, and integration of post-consumer recycled content. As companies pursue such strategies, though, they may find that the impact isn't being adequately tracked or communicated in a landscape littered with sustainability reporting frameworks.

At Ernst & Young LLP, we view the circular economy as a transformative process to reimagine and redesign social and business interactions. The circular model creates long-term value by simultaneously enabling economic growth and positive ecological impacts. Transitioning to circular and closed-loop models, in addition to environmental benefits, could increase profitability and shield companies from price fluctuations and material shortages. For instance, the European Commission estimated that manufacturing firms in Europe spend on average 40% on materials.[3] Additionally, the International Labor Organization estimates that transitioning toward a CE model could create up to 6 million jobs by 2030, through activities linked to recycling, repair, renting and remanufacturing.[4]

[1] "Five years of the circularity gap report," *CGR 2022 website*, circularity-gap.world/2022.

[2] Ibid

[3] "Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions," *Eur-Lex website*, eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2020%3A98%3AFIN.

[4] "World Employment and Social Outlook 2018: 24m jobs to open up in the green economy," *ILO website*, ilo.org/global/about-the-ilo/newsroom/news/WCMS_628644/lang--en/index.htm.

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The rise of circular business models and initiatives is driven by regulation, investor interest and consumer demand, among other factors. Though interests vary among stakeholders, greater transparency is a consistent desire. Investors are increasingly demanding higher accountability of environmental, social and governance (ESG) activities/approaches and methodically evaluating nonfinancial reporting.[5] Consumers are also becoming more conscious of the environmental impact of their consumption habits and demanding more sustainable products and services. According to the EY Future Consumer Index, 71% of respondents agreed that businesses must be transparent about their environmental impact.[6]

To maintain their competitive advantage and meet stakeholder demands, organizations will need to improve transparency over their sustainability practices and the impact of their products and services. And as CE becomes more prevalent, there is a growing need for developing metrics to track and measure environmental and business performance. This report examines the current reporting frameworks and how they relate to CE, how companies are using them, and what we can expect in the future.

2. Current state of CE reporting

Several tools are available to measure a business's circularity, and more are being developed:

1. The most prominent example is Circulytics, which was developed by the Ellen MacArthur Foundation (EMF), one of the leading global organizations championing CE. Companies can leverage this tool to measure the extent to which they have achieved circularity across their operations. The tool uses a scoring process and provides an accompanying report that defines areas for improvement.[7] While it is intended to help organizations understand their current state of circularity, it can also be used as an external reporting tool. However, its uptake has been limited. According to EMF statistics, only 15% of companies that signed up completed the assessments and received a scorecard.[8] According to our analysis, only 7% of the companies we assessed were listed on the EMF website as being Circulytics users, and most of them did not reference the Circulytics assessments within their public communications. Only one organization we analyzed, Hewlett-Packard, referenced in its 2020 Sustainable Impact Report having used Circulytics and the insights derived to inform their circularity strategy.[9]
2. The World Economic Forum's white paper on "Stakeholder Capitalism"[10] advocates for a consolidated list of commonly cited ESG metrics across four pillars, of which the pillar of planet protection identifies metrics that encompass circularity.
3. Reporting standards from the Global Reporting Initiative (GRI) include metrics on waste reduction and diversion from landfills, as well as recyclability rates.[11]
4. The Sustainability Accounting Standards Board (SASB) standards facilitate the disclosure of ESG information for stakeholders and other rating agencies, enabling informed decision-making in capital markets.
5. A joint publication by the Platform for Accelerating the Circular Economy (PACE) and Circle Economy called "Circular Metrics for Business" provides a landscape analysis of different tools and methodologies available for companies to track, measure and report on their circularity.[12]
6. The Circular Transition Indicators (CTI) is a self-assessment tool developed by the World Business Council for Sustainable Development (WBCSD).[13] The insights from CTI are generally intended as an internal assessment tool rather than a public reporting tool.

Alternately, companies can communicate their circularity efforts through product certification. Certifications such as the Cradle to Cradle Certified® Products Program, administered by the Cradle to Cradle Products Innovation Institute, have stringent criteria and third-party verification and are highly trusted by consumers.

[5] "Is your ESG data unlocking long-term value?" ey.com/en_gl/assurance/is-your-esg-data-unlocking-long-term-value.

[6] EY Future Consumer Index.

[7] "Measure business circularity: Circulytics," *Ellen MacArthur Foundation*, ellenmacarthurfoundation.org/topics/circular-economy-introduction.

[8] "Circulytics Data & Insights," *Ellen MacArthur Foundation*, ellenmacarthurfoundation.org/topics/circular-economy-introduction.

[9] "Sustainable Impact Report," hp.com/h20195/v2/GetPDF.aspx/c08228880.pdf.

[10] "Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation," *World Economic Forum*, weforum.org/reports/measuring-stakeholder-capitalism-towards-common-metrics-and-consistent-reporting-of-sustainable-value-creation.

[11] "GRI 306: Waste 2020," *GRI*, globalreporting.org/media/ikhf0ggk/gri-306-waste-2020.pdf.

[12] "Circular Metrics for Business," *Resources for circular metrics*, pacecircular.org/sites/default/files/2022-07/20220707%20-%20CEC%20Metrics%20Whitepaper%20-%20report%20-%20210x297mm.pdf.

[13] "WBCSD Welcomes New Leadership," World Business Council For Sustainable Development, wbcsd.org.

Figure 1: Comparison of existing reporting methodologies

	External reporting						Internal tools		Certification
	Natural Capital Protocol	Global Reporting Initiative (GRI)	Sustainability Accounting Standards Board (SASB)	WEF Stakeholder Capitalism	UN Global Compact	Sustainable Development Goals	Circulytics	Circular Transition Indicators (CTI)	Cradle to Cradle certification
Objectives	Process protocol Decision-making	Reporting standard Reporting and communication	Industry-specific (for 77 industries) standards for sustainability accounting	Developing common metrics and a consistent framework of reporting on sustainable value creation	Improve and increase reporting of climate-related financial information	Global indicator framework Strategic initiatives	Measure circular economy performance of companies Inform decision-making and guide circular economy strategies	Identify circular opportunities and linear risks Set a baseline and monitor progress Respond to customer and investor inquiries Start value chain conversations Attract new business	Certification and impact assessment framework Product design
Dimensions	Environmental	Environmental Social Economic	Environmental Social Human Business model and innovation Leadership and governance	Governance Planet Social Prosperity	Governance Planet Social Prosperity	Environmental Social Economic	Environmental Social Economic	Environmental	Environmental Social Economic
Indicators	None	91 indicators including: Materials, Water, Energy, Biodiversity, Emissions, Effluents & Waste, Products & Services, Compliance, Transport, Social, Economic	Industry dependent	21 core metrics and 34 expanded metrics	None	232 indicators including: Materials, Water, Energy, Biodiversity and Land Use, Waste and Pollution	Products and Materials, Services, Plant & Property & Equipment Assets, Water, Energy, Finance	% circular inflow % circular outflow % water circularity % renewable energy	61 indicators on Materials, Water, Energy and Carbon, Social, Economic
Links with CE	"CE is identified as a strategic initiative that the natural capital valuation can support regarding decision-making"	New waste standards are linked to CE	"At SSAB, we have defined our approach and core contribution to the circular economy by focusing on four critical areas: Resource efficiency, Repair & Replace, Recycle and Upgrade. "	Several factors in the planet pillar directly linked to CE	Not mentioned but several factors are linked to CE	Not mentioned but several factors are linked to CE	Developed by EMF and measures circular economy performance	"The CTI is in alignment with the Ellen MacArthur Foundation circular economy principles ..."	CE EMF butterfly is based on the biological and technical cycles defined by the framework

Source: Table originally retrieved from page 32 Landscape analysis (wbcsd.org) and updated and adapted by the authors to include additional frameworks and update outdated information on GRI.

2.1 Reporting on circular metrics through standardized reporting frameworks

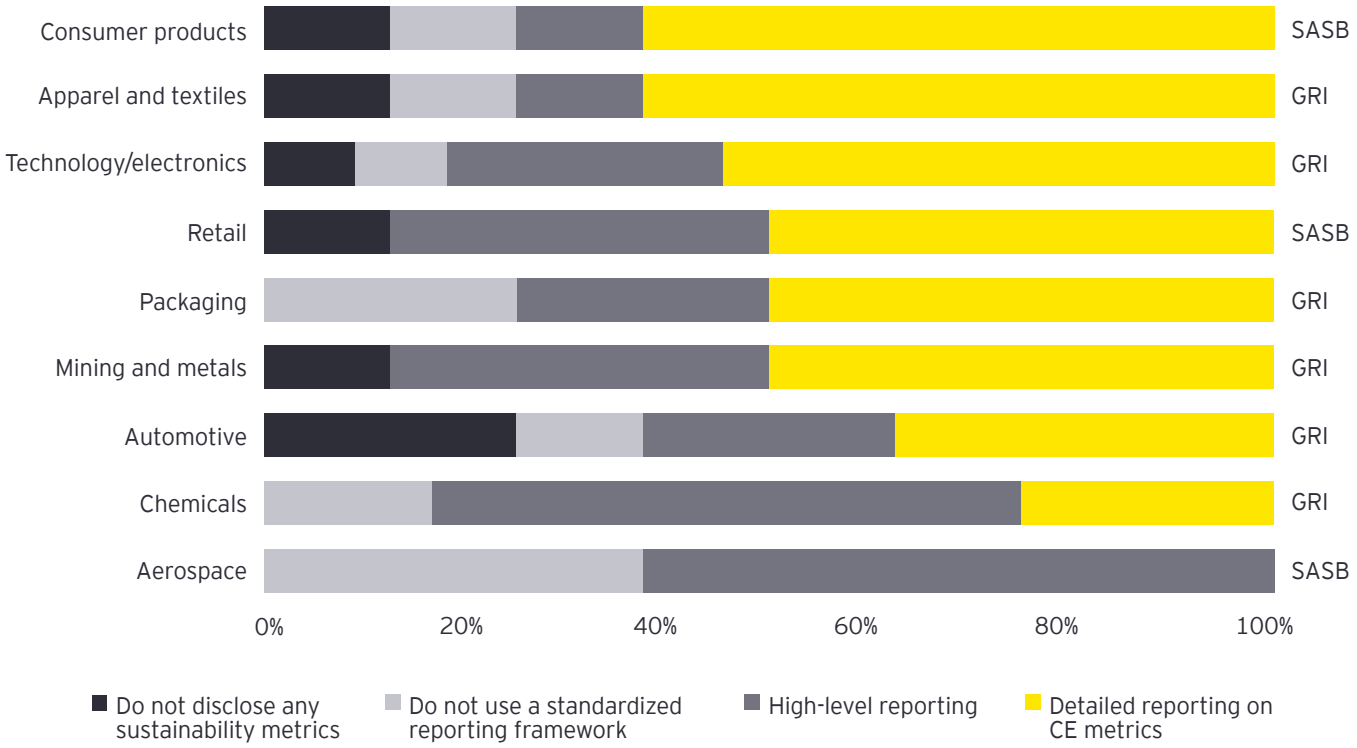
This research aims to identify the current state of reporting on circularity by identifying:

1. The extent to which organizations report on circularity metrics
2. The frameworks used
3. How the organizations publicly communicate their strategies and initiatives
4. Whether they publish goals and report on progress

We focused on nine key industries: chemicals, packaging, retail, automotive, apparel and textiles, aerospace, consumer products, technology/electronics, and mining and metals. Further details on the methodological approach can be found in Annex 1.

This analysis found that a wide range of CE reporting maturity levels exists across industries. The consumer products and apparel industries lead the way on CE reporting, extensively utilizing standardized frameworks. Across the board, the two most popular frameworks for reporting on environmental and circularity metrics were GRI and SASB, with many of the organizations using both concurrently.

Figure 2: Level of disclosure on CE reporting per industry and top frameworks



Source: Authors, with data collected from company websites and other publicly available resources

On the other hand, some industries also reported using industry-specific standards. For example, most of the companies in the mining and metals industry reported progress using the industry's guiding principles outlined by the International Council of Mining and Metals.[14] It includes Principle 8.1, which addresses measures to integrate circularity principles such as recovery, reuse and recycling of energy, natural resources and materials into project design, operation and decommissioning.

[14] "Our principles," ICMM, icmm.com/en-gb/our-principles.

2.2 Communicating to stakeholders on CE strategies, initiatives, goal setting and progress tracking

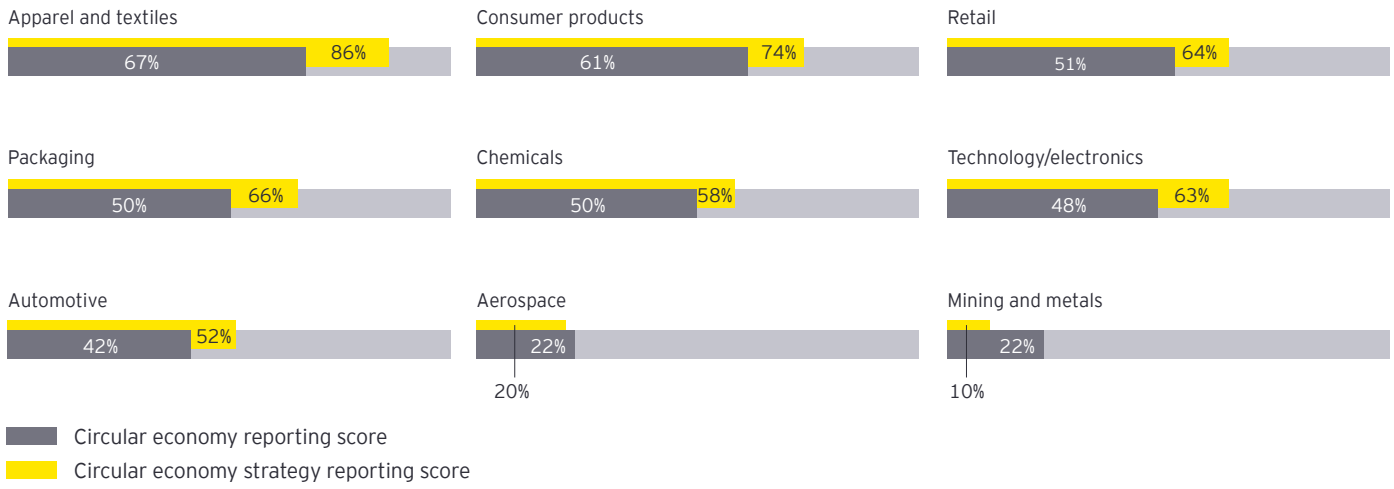
Reporting frameworks are one way to communicate to stakeholders in a structured and comparable manner. But companies also leverage other channels to communicate material issues. We assessed the following components to analyze how companies were communicating more broadly on their efforts to advance CE (details in Annex 2):

1. Description of CE strategies
2. Communication on CE-related initiatives
3. Public establishment of CE targets
4. Reporting progress

Each company was assessed on a scale of 0 (no type of public communication) to 5 (detailed communication) in each category. The following figure reflects the total percentage score of the companies in each sector.

Figure 3: Circular economy reporting across sectors

Communication on CE strategies, initiatives, targets and progress



Source: Authors, with data collected from company websites and other publicly available resources

Despite being at different levels of maturity, all industries we analyzed report their circularity journeys to a certain extent. Their strategies differ, but the principles are adaptable to a broad spectrum of industries. For example, the automotive industry mostly focused on improving the circularity of batteries in electric vehicles, which are capturing more market share. The retail industry had measures to address packaging through light weighting or rightsizing and incorporating compostable or biodegradable materials, as well as improving information to consumers on how to properly recycle different types of materials or setting up collection points for hard-to-recycle products.

Some industries are leading the way in their communications on the implementation of circular strategies and business models. The apparel and textiles industry is undertaking concerted efforts to improve the environmental impact of the industry as a whole and is making it a central theme in its public communications. The chemicals industry is playing a key role through research and development of sustainable materials and chemical recovery technologies. While companies are pioneering in this space, the way they communicate those efforts shows room for improvement. For example, the aerospace industry is very advanced in implementing lifecycle analysis of its products, developing mechanisms to recover and reuse materials, and offering services to extend product lifetimes. But the focus of its external communications is generally on the carbon footprint of its products linked to fuel use through measures such as alternative fuels.

Some industries could improve on their circularity journey, including the mining and minerals industry. It is the least mature in discussing its circularity strategy, despite strong overall ESG reporting, likely because it is at the front end of the value chain in a linear economic model. However, some industry players are taking the lead to integrate circularity principles, such as Anglo-American. It has a dedicated section in its 2021 Sustainability Report and details several flagship initiatives, such as Future Smart Mining and partnering with The Circulars Accelerator to accelerate circular innovation.[15]

Lastly, while frameworks exist for reporting on circular-related metrics, companies are not sufficiently leveraging them to consistently track progress on their circularity objectives.

Apparel and textiles

The apparel and textiles industry was were the most thorough in its reporting, both in terms of the level of details publicly disclosed on ongoing initiatives, as well as goal setting and progress reporting. Companies in this sector have created ambitious CE strategies to tackle textile waste and pollution and to develop more circular business models and products. While the industry has grand ambitions toward redefining itself, companies noted that they have faced challenges in achieving some of their CE objectives. Several of the companies analyzed provided detailed reporting on the types of materials they use, such as recycled nylon and polyester, and communicated on their efforts and investments to develop more sustainable materials and circular products.

Packaging

Because of the high volumes and the nature of packaging, most of which tends to be single use, the packaging industry will be an important actor in the overall transition toward a CE. This industry is taking important steps toward reinventing itself, and this is reflected in its public reporting. The industry is taking active measures to design waste out of packaging by investing in materials that are recycled, renewable, recyclable or compostable. The industry is also seeking to tackle plastic pollution and the impact of single-use products by researching bio-based alternatives and reusable forms of packaging. For packaging companies that had paper-based and pulp products, investing in sustainable forestry was a key priority to conserve their ecosystem while maintaining a sustainable supply of raw materials.

Chemicals

The chemical industry is already playing a pivotal role in the circular transition by investing in new product technology, value chain partnerships, circular business models, waste management infrastructure and other business partnerships. While the industry is at the vanguard of circularity, this is not fully reflected in the extent to which they report on their strategies, initiatives and targets. Some organizations explicitly place their circularity programs at the forefront of their strategy and communicate on a range of initiatives, including new materials, advances in chemical recycling, and new business models such as chemical leasing.

Technology/electronics

The technology and electronics industry as a whole is taking ambitious actions to minimize e-waste, yet the level of reporting and communicating on CE strategies and initiatives diverged among companies. Several organizations, particularly those based in East Asia, did not communicate on CE strategies and initiatives, consequentially driving down the industry average in this assessment. The most ambitious CE initiatives within technology companies focus on the elimination of plastic from packaging and incentivized device trade-in programs.[16] Certain companies have even developed advanced mechanized disassembly methods that recover the most important materials for reuse.[17] Alongside circular design, broader industry efforts focus on enhanced device integrity to drive the longest possible usable life.

Companies are increasingly reporting on their ESG governance frameworks and how decision-making linked to sustainability is allocated throughout the organization. Thanks to initiatives such as the Taskforce on Climate-related Financial Disclosures (TCFD) recommendations, companies are increasingly reporting on governance related to climate change. However, there is no such framework for circularity, and CE governance is often rolled into the broader ESG governance frameworks.

[15] "Sustainability Report 2021," *Sustainability*, angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2022/aa-sustainability-report-full-2021.pdf.

[16] "Environmental Progress Report 2022," *Apple Event*, apple.com/environment/pdf/Apple_Environmental_Progress_Report_2022.pdf.

[17] "Apple expands global recycling programs," *Newsroom*, apple.com/in/newsroom/2019/04/apple-expands-global-recycling-programs.

2.3 Reporting through global alliances

Another mechanism companies are utilizing to report on their progress toward circularity objectives is through partnerships and industry alliances. For example, the EMF, in conjunction with the United Nations Environmental Program (UNEP), published a Global Commitment targeting plastic pollution.[18] Over 500 organizations have signed in support of this initiative and have established ambitious CE targets for 2025. Progress toward these goals is annually tracked and reported to the EMF.[19] The signatories cumulatively represent 20% of all plastic packaging produced globally and, in this analysis, most of the consumer goods, packaging and retail companies assessed are members as well. Several organizations from the apparel and textiles industry also used this platform to report on targets to eliminate plastic from their products and packaging. There are additional global alliances driving businesses toward circularity, such as the Circular Electronics Partnership and PACE. While PACE has published information for businesses and governments on reporting lead practices, it has yet to develop an external reporting framework.

3. Evolution of CE reporting

Collecting and reporting data on circularity can create organizational value and support informed decision-making on strategy decisions. This can offer an advantage when responding to regulatory and societal pressure and facilitating access to capital and talent.

Globally, regulators are adopting legislation to increase the scope of nonfinancial reporting. Companies are responding to regulatory requirements and stakeholder pressure by expanding the scope of their nonfinancial reporting. For example:

1. 2,600 institutions have supported an increase in scope in climate-related reporting using TCFD.

2. As of March 2022, 1,330 of the 2,900 constituents of the MSCI ACWI Index had set decarbonization and net-zero targets.[19]

3. In the past two decades, the number of companies publishing corporate social responsibility reports that employ GRI standards has increased a hundredfold.[21]

4. Industry is also leading the way in development of mechanisms to assess nature impacts through the Taskforce on Nature-related Financial Disclosures, currently being prototyped, and is expected to be finalized by 2023.[22] This framework links directly to CE as an area identified for nature-related opportunities.

It is thereby apparent that capital markets and regulators are leading the way in defining the scope of nonfinancial reporting. However, limited regulations and alignment on CE reporting exist.

Figure 4: Evolution of circularity reporting

Now	Next	Beyond
▸ Multiple frameworks are available. ▸ Circularity reporting is viewed as a competitive advantage rather than the norm. ▸ Companies are leveraging digital tools to streamline and facilitate data collection.	▸ International reporting requirements and frameworks will introduce nonfinancial reporting on CE materiality. ▸ The quality and robustness of data will significantly improve thanks to digital enablers.	▸ Standardization and convergence will develop across geographic regions and frameworks due to international reporting requirements. ▸ Real-time reporting on an organization's circularity performance will be possible.

Source: Authors

[18] "Our vision for a circular economy for plastics," *Designing out plastic pollution*, ellenmacarthurfoundation.org and "A UN treaty on plastic pollution," A UN treaty on plastic pollution, ellenmacarthurfoundation.org.

[19] "The Global Commitment 2021," *Global Commitment*, ellenmacarthurfoundation.org/global-commitment/overview.

[20] Uddin, Zohir and Wu, Emma. "As TCFD Comes of Age, Regulators Take a Varied Approach," *msci.com*, msci.com/www/blog-posts/as-tcfd-comes-of-age-regulators/03140250988.

[21] Pucker, Kenneth P. "Overselling Sustainability Reporting," *hbr.org*, store.hbr.org/product/overselling-sustainability-reporting/R2103K.

[22] "Developing and delivering a risk management and disclosure framework for organisations to report and act on evolving nature-related risks," *TNFD website*, tnfd.global.

The European Union published a proposal for the Corporate Sustainability Reporting Directive (CSRD) in April 2021. CSRD amends the existing Non-Financial Reporting Directive to expand the scope of both reporting and required corporate disclosures, and it incorporates elements from TCFD, GRI and SASB — in conjunction with a wide range of other disclosure types — into a consistent reporting framework. In April 2022, the European Financial Reporting Advisory Group published the draft reporting standards in the context of a public consultation linked to this directive, with one of the standards focusing specifically on resource use and circular economy.[23] Companies required to employ this standardized framework must also digitally tag statements and obtain third-party assurance for data accuracy.[24]

With Europe leading the way on regulatory reporting requirements linked to circularity, global organizations will likely seek regulatory alignment across geographies and harmonize reporting frameworks.

Furthermore, technology and monitoring systems are an important lever to allow better reporting with comparable and consistent data, despite how rapidly this space is evolving and how systems can become outdated. Digital transformation with technologies such as Internet of Things, artificial intelligence and blockchain is enabling the CE transformation. Digitization of supply chains and operations makes extensive data collection, modeling and interpretation possible. Comprehensive collection of accurate data is synonymous with reporting, with benefits going beyond the CE focus itself. Thus, as digital tools become more advanced, interconnected and capable of real-time communication, so will reporting and the insights derived from data collection.

4. Circularity reporting as a future growth strategy

Figure 5: What steps can companies take to prepare?

1. Understand organization's environmental impact	2. Develop a circular strategy	3. Implement the circular strategy	4. Report progress
▸ Identify material ESG issues of your organization and supply chain ▸ Leverage tools to measure the impact of your organization	▸ Identify your organization's maturity regarding circularity ▸ Identify how you compare to your peers ▸ Set goals and objectives and a roadmap to achieve them	▸ Implement measures to achieve goals ▸ Continuously monitor progress to identify operational efficiencies or roadblocks ▸ Set in place mechanisms for rapid response to changing circumstances	Report progress to relevant stakeholders to improve reputation and attract new opportunities

With increasing pressure to limit their environmental footprints, organizations must consider transitioning to more circular business models. The first step in this process involves deepening your understanding of your company's environmental impacts, including identifying areas with the highest impact and cost-benefit considerations. A strong understanding driven by data will help inform and develop strategies that will drive the most value when transitioning toward circularity. Through continuous monitoring and reporting, organizations can position themselves as a leading and trusted partner. These reputational gains will also help attract and retain new consumers, talent and capital.

Transparency over a business's circular models will help drive value by:

- Improving the understanding of its impact and informing pathways to reduce its environmental footprint/ecoefficiency
- Keeping pace with global regulatory and consumer pressures
- Building brand recognition and reputation as sustainability leaders

Achieving circularity will require collaborative approaches and could cause a ripple effect across the value chain.

[23] "Public consultation on the first set of Draft ESRS," *EFRAG website*, efrag.org/lab3.

[24] "Corporate sustainability reporting," *European Commission website*, finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en.

Annex 1: Methodology

This research aims to build on the landscape analysis already developed by the World Business Council for Sustainable Development (WBCSD).[25] To do so, a rubric was developed to score company reporting, strategy and governance structures based on how well they transparently communicate their progress to advance toward a CE model. It involved:

1. Selecting nine key industries: chemicals, packaging, retail, automotive, apparel and textiles, aerospace, consumer products, technology/electronics, and mining and metals. Within each industry, 8 to 12 companies with either the largest market cap and/or notable circular initiatives were identified to serve as a representative sample.
2. Scoring the integration of CE factors in sustainability strategy as well as progress toward CE targets, using the rubric. Other rubric indicators such as effectiveness of communication and promotion, participation in EMF initiatives, and environmental accountability within governance were also assessed.
3. Analyzing the quantitative results to reveal sector trends and inform hypotheses on the future of CE reporting.

Annex 2: Details on components

We assessed the following components to analyze how companies were communicating more broadly on their efforts to advance CE:

1. Description of CE strategies: The level of detail provided on how circularity factors into their strategic objectives. Being described either directly in a separate report focusing on CE or being integrated in sustainability or annual reports. Measuring the level of detail included in these strategies, level of ambition and description on how it factors in business and growth strategies.
2. Communication on CE-related initiatives: Extent to which they describe ongoing initiatives such as product and service offerings, changes in design and materials to become more circular, measures to recover materials and integrate them into new ones, partnerships with other value chain actors to enable circularity, or measures that are currently or have recently been piloted and information on derived insights from these initiatives. This type of communication is not only focused on investors or regulators but also toward consumers, by highlighting and making prominent on companies' available communication channels, such as company websites, the extent to which they have circular initiatives.
3. Public establishment of CE targets: Establishing public targets on objectives linked to CE and information on how they intend to track progress toward them.
4. Reporting progress: Whether companies report systematically on the progress toward achieving those targets.

[25] "Circular Metrics Landscape Analysis," *wbcsd.org website*, docs.wbcsd.org/2018/06/Circular_Metrics-Landscape_analysis.pdf.

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