

WHITEPAPER

Embedding intelligence within ESG



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Overview

The new US Securities and Exchange Commission's (SEC) standardized disclosure rules on climate risks (March 2022) have renewed focus on ESG efforts and how they are measured. () Stakeholders including boards, investors, and shareholders must navigate this chaotic space where standardization, trust, and readily available information are challenging to find. This whitepaper will examine how to use design, analytics, and AI to compute and compare ESG efforts across enterprises using publicly available unstructured data.

ESG efforts incorporate considerations of social responsibility in the way a business impacts various stakeholders along the supply chain, from the employees and customers to the board, shareholders, potential investors, and the broader community. It serves as a wake-up call to the board and leadership regarding their environmental, social, and corporate governance obligations. ESG is now a vital marker to evaluate businesses—and investors use it to screen potential investments. ESG measures reflect a business's social consciousness for employees and potential employees who are growing increasingly concerned about what companies they align themselves with.



Current state

ESG scoring is a significant challenge for enterprises. ESG scoring evaluates how sustainable an enterprise is (or is perceived to be) concerning its environmental impact, social impact, and governance.

However, ESG scoring processes are not yet standardized and thus face multiple challenges:

1

There is no industry-specific approach to tackle this problem. Current solutions are one-size-fits-all.

2

ESG scores are moving targets with no single source of truth. New frameworks and standards regularly emerge, forcing business leaders to reassess approaches and KPIs. Recent cash outflows from ESG funds have further highlighted the reduced faith in the community.

3

ESG data is reported at multiple sources, including corporate sustainability reports, annual reports, and emission disclosures—hence, tracking them manually is inefficient.

In determining what ESG means for each business, leaders must identify the factors to be measured, what information to collect, how to collect it, and how to handle the information to provide meaningful insights.

Fractal's ESG framework

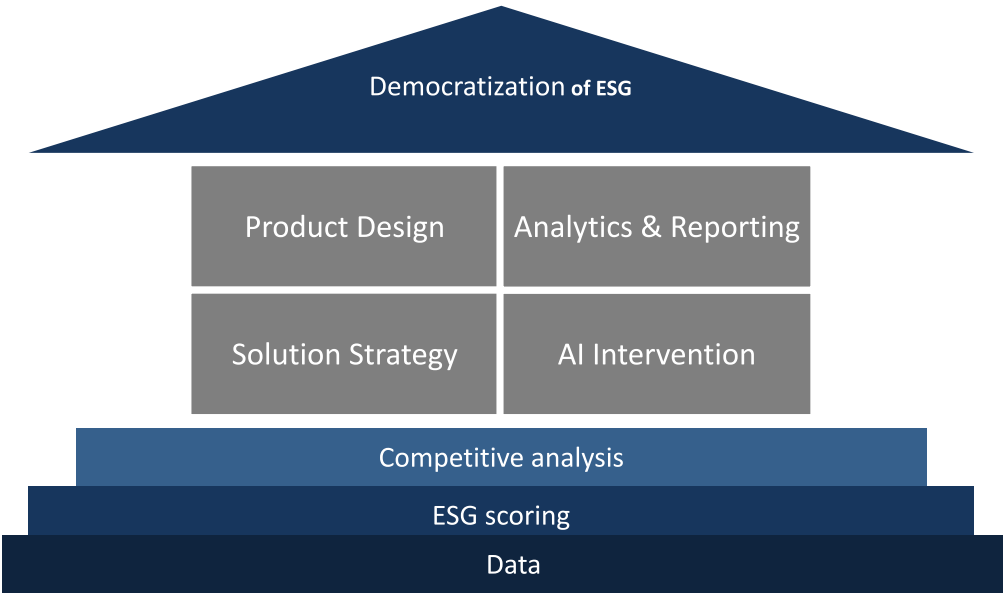


Fig. 1 Fractal's ESG framework.

Fractal's ESG approach assesses technology and process maturity to establish benchmarks and form baseline comparisons. AI is used to collect data from multiple structured and unstructured sources to create a single, comprehensive source of truth. The data is also used to develop simulations and optimization workbenches that enable what-if scenarios, indices targets, volumes, and locations. Democratization is an equally critical piece of the puzzle, which takes a human-centered and behavioral sciences approach and seeks to spread awareness, provide education, and drive the adoption of ESG measures.

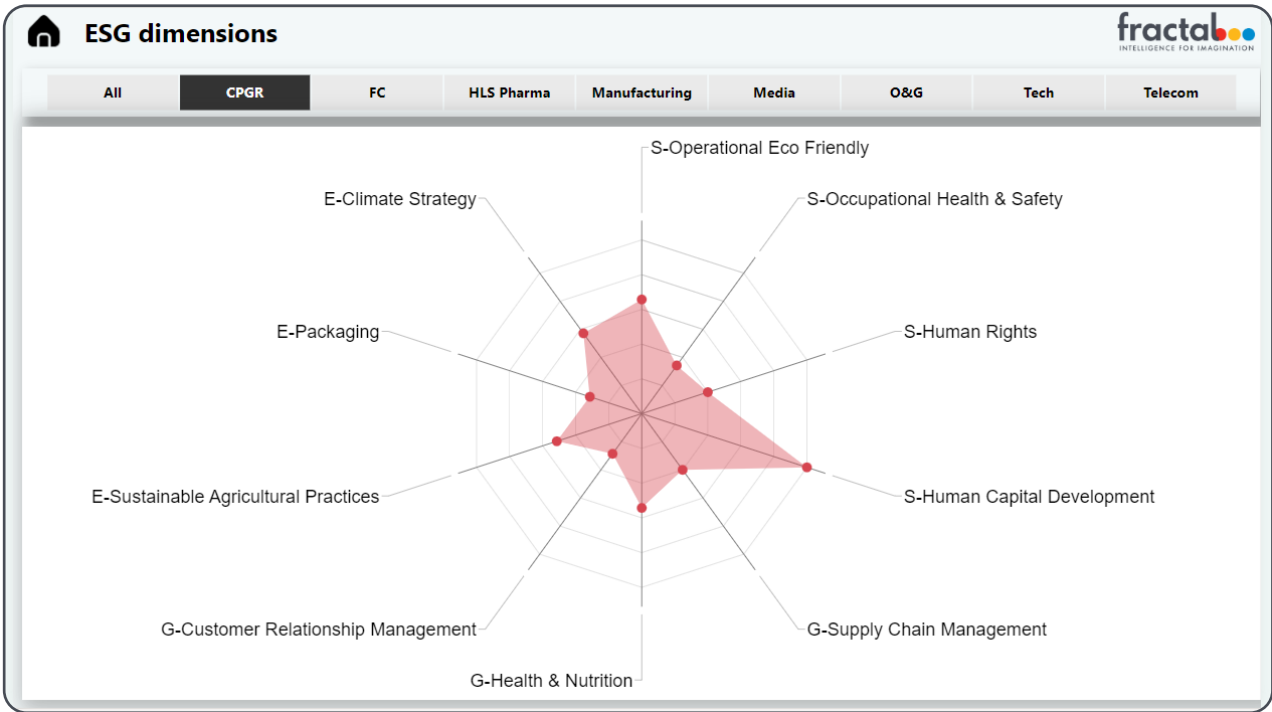


Fig. 2. Fractal’s internal tool to establish direction & immediate next steps on realizing the ESG vision.

Polymakers and governments have only just begun to standardize ESG scoring and certification. In addition to initiatives by the government, there is an immediate need for a comprehensive 360-degree approach to producing a meaningful assessment.

Given all the above challenges, at Fractal, we approach these using the combined lens of AI, engineering, design, and behavioral sciences to seek answers to these pertinent questions.

Key enabler to your success: Data

ESG data is fundamental for organizations to understand their performance across ESG factors and identify opportunities for improvement. It's also crucial for investors to understand the organization's strategy.



Environmental data includes metrics like energy use, waste, pollution, natural resource conservation, and treatment of animals.



Data on **social** aspects details a company's business relationships like working conditions, employee benefits, and impact on local communities.



In measuring **governance**, we check company diversity, ethical standards, pay for performance, and more.

Until recently, ESG data was static and historic; now, it is a current and shifting metric, frequently published through different mediums. Companies publish data regarding their initiatives in CSR reports, carbon offset strategies, and AGM reports. Many third-party organizations provide real-time data; for example, some firms use satellites to show a project's impact on the surrounding ecosystem. Organizations and critics use social media platforms like Twitter and LinkedIn to discuss their ESG policies. Employee reviews on websites like Glassdoor and indeed.com provide insight into company culture, governance, and values. Video interviews and podcasts are a goldmine of valuable information since participants tend to be much more open in expressing themselves verbally. Combined, these sources provide a broad view of a business's ESG performance.

However, the reasons for collecting data must be defined by business outcomes. Once a problem is framed, the right interventions need to be designed, then informing the data that needs to be collected.

Using Fractal's Phi design system, we helped an Australian telecom player leverage data analytics in their journey towards reducing absolute carbon emissions by 50% by 2025. This enabled the team to identify key opportunity areas across their data centers and network sites, assess the business case, and work towards prototypes to be scaled for driving large-scale benefits.

Our approach—carried out by a multi-functional team with skill sets in AI, engineering, and design—started with business immersion, which complemented qualitative interviews and quantitative surveys. This led to a clearer understanding of the problem and the opportunity to show more specific use cases. Relevant data was then identified and collected to create working prototypes. A business case and solution design followed, using multiple lenses and provocations. The ideas and prototypes won awards across the environment, economic, and innovation categories – a clean sweep.



Setting up

Data and reporting for insight

Organizations face a massive challenge in identifying opportunity areas for intervention and deriving relevant insights from their ESG data. A leading global CPG company's sustainability efforts were challenged as they struggled to contend with multiple data sources, manual interventions, and irregular data granularity. Their data flow and processes were non-standardized and lacked harmonization layers. Fractal built an end-to-end data platform for ESG reporting to streamline their processes. We automated processes to standardize, collaborate, and harmonize their data across all business functions for ESG visibility through a scaled engineering approach. Our BI platform tracked 40+ KPI, including energy and water consumption, CO2 emissions, benchmarked emissions across supply chain nodes, and the packaging/recyclability index.

As discussed above, is not only a huge amount of structured ESG data available but also a huge amount of unstructured data continuously being generated daily. Organizations face challenges in using information retrieval (IR) techniques to help extract relevant information from these large corpora of unstructured data. It's not just a question of volume—this data is available in various formats such as pdfs, news articles, images, and videos.

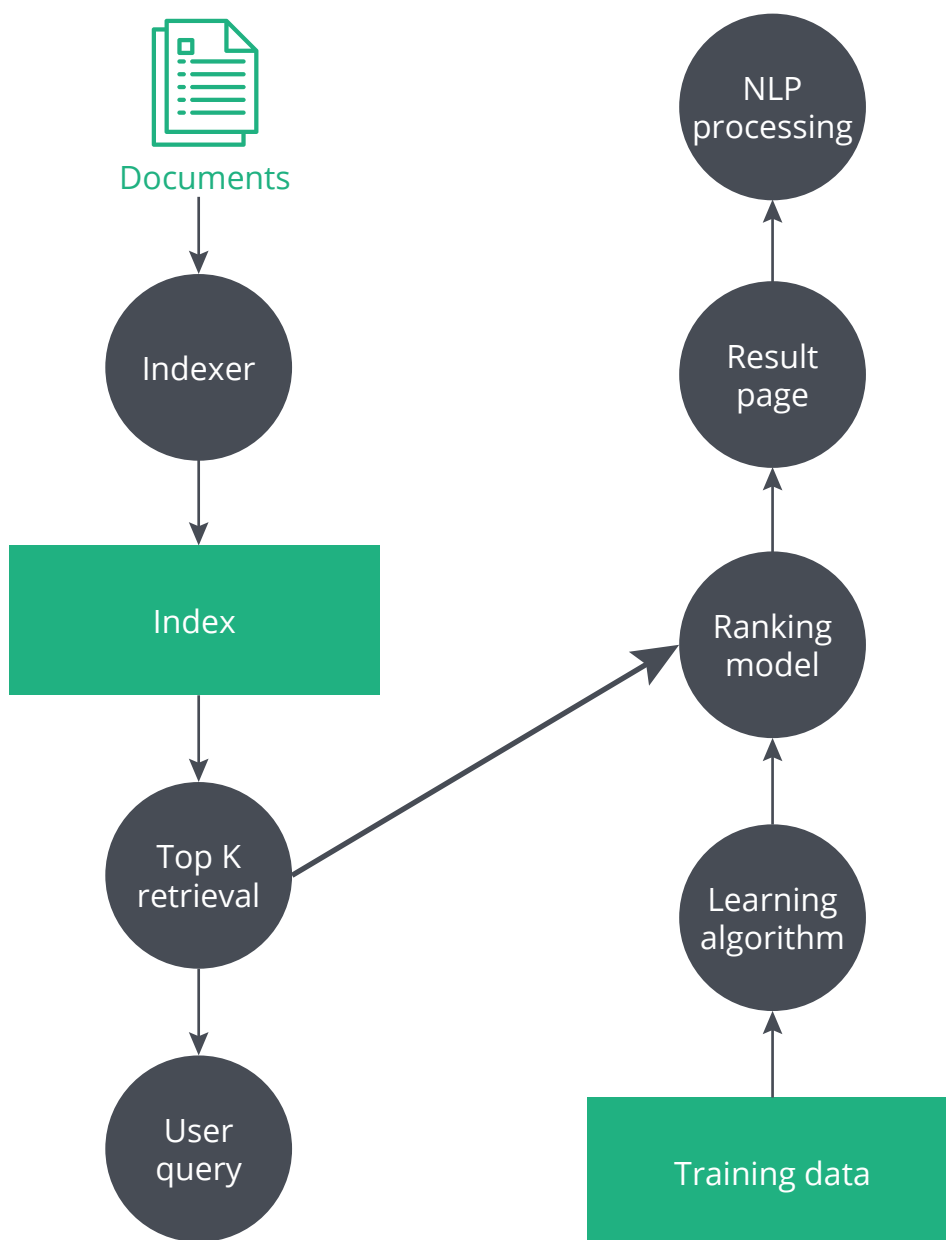


Fig. 3. Framework for information retrieval and processing

The framework above shows how we can produce results from a vast data pool. This represents primarily text-based data and can be extended to images and videos. The required data is collected by web crawlers and stored in the database. We can perform topic modeling, sentiment analysis, text summarization, and image analytics from obtained results to extract the required ESG information.

Insights after AI intervention

AI has proven to be a game-changer in making sense of vast quantities of unstructured information. Our proprietary ESG framework uses advanced neuro-linguistic programming (NLP) techniques in conjunction with the scaled approaches of Big Data analysis to provide a holistic measure of a company's efforts, free from the biases common to ESG reporting.

Advanced NLP techniques sift through vast amounts of ESG data. We convert unstructured data from news articles, social media, ESG audits, and audio conversations into word embeddings, so topics of similar meaning are represented closer together using pre-trained AI algorithms. This method gives higher weights to important words using state-of-the-art information retrieval techniques.

Using this condensed, relevant information, we can see how different enterprises are faring in their ESG efforts. Results are then brought in from our problem framing workshops, and we define specific areas of focus that are important to their ESG strategy depending on the industry, competitors, market presence, and organizational context. For example, a CPG company might be focused on waste and hazardous materials management, while a bank may be more interested in customer privacy. After tuning the algorithm with this domain-specific information, we compute the scores within each field of interest relative to industry benchmarks.



Post scoring, we compare against nearest competitors within the industry in a network graph form. Organizations can gauge how close or far their performance is relative to industry-leading practices. This process identifies areas of strength and weakness to inform future ESG-related decisions and investments so organizations can increase competitiveness and improve ESG risk management systems. We use simulations to predict what values are most important to consumers regarding ESG, which will further refine future efforts.

This combination of AI with ESG also helps combat green washing, when a company claims to be environmentally conscious. Still, deeper analysis shows little in the way of actual sustainability efforts. Identifying the right metrics and using features like the company's financial information, report document length, lexical diversity, sentiment, and goals or targets in our NLP models helps differentiate tokenism from genuine efforts.

Fractal's ESG framework and technology stack is a multi-industry panacea for establishing the right foundations for process and data.

We bring an inter-disciplinary approach to –



Design the right ESG strategy for your organization



Set up relevant processes, reporting, & insight generation at scale



Leverage timely AI interventions



Democratize to align & mobilize all stakeholders in the pursuit towards meaningful ESG



We believe complex problems need to be looked at through multiple lenses simultaneously to be grasped. With the new lens new dimensions emerge, thus making complexity more evident and solvable.

How is Fractal Dimension set up to do it?

We identify complex and unstructured problem themes in the industry that are relevant. We invest in building expertise and a dimensionalized point of view around it.

We engage clients via 'slow-thinking' workshops and co-creation jams to curate our perspective for their problem. We invest in architecting an end-to-end state-change program.

We partner with client teams at Fractal to deploy cross-functional solutions and support them in helping clients realize value ROI.



Want to find out more on how our approach can help your business? Reach out today at dimension@fractal.ai

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Enable better decisions with Fractal

Fractal is one of the most prominent players in the Artificial Intelligence space. Fractal's mission is to power every human decision in the enterprise and bring AI, engineering, and design to help the world's most admired Fortune 500® companies.

Fractal product companies include Qure.ai, Crux Intelligence, Theremin.ai, Eugenie.ai & Samya.ai.

Fractal has more than 2,300 employees across 16 global locations, including United States, UK, Ukraine, India, and Australia. Fractal has consistently been rated as India's best company to work for, by The Great Place to Work® Institute, a 'Leader' by Forrester Research in its Wave™ on Specialized Insights Services, Computer Vision & Customer Analytics and as an "Honorable Vendor" in 2021 Magic Quadrant™ for data & analytics by Gartner.



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