Empowering ESG digitalization: A *five-step framework* for successful ESG intelligence

Leverage existing tools
to generate the insights you need

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The technology landscape in the sustainability space has evolved rapidly. In response, a huge number of management tools have been released to the market, with carbon accounting solutions vying to replace outdated environmental health safety (EHS) legacy systems and environmental, social, and governance (ESG) reporting, and compliance tools continuing to emerge. The sheer volume of options can feel overwhelming, but in an AI world there is a significant advantage by having more, and more accurate, information that represents both the operational and strategic challenges of your business.

Many tools promise to do it all – from automating data collection to managing, calculating, and reporting ESG metrics. However, the reality is that no single tool can fully address all ESG requirements or provide comprehensive insights. Additionally, many solutions require you to input data and, as the saying goes, "garbage in, garbage out." Relying solely on these tools won't ensure trusted sustainability data, maintain data assurance, or create business value beyond basic compliance reporting and entry-level analytics.

The answer is not investing in new tools, but rather leveraging existing technologies more effectively or building from new ones such as AI agents, to streamline ESG digitalization efforts and establish a single source of truth.

Amid regulatory changes and uncertainty, most companies are now required to manage their ESG data due to regulations even with recent changes such as the future Omnibus legislation for the EU, and SB 253 in the US. While sustainability is a cost of doing business for many companies, a few are leading the way in leveraging ESG intelligence and digital sustainability to build a competitive advantage. In a world where AI decision-making will become the primary technology for competitive advantage, ESG data is one of the richest unmined sources that can better inform and activate AI, both for ESG and "traditional" business metrics.

Companies looking to go beyond reporting and maximize business value through digital sustainability should adopt a five-step framework.

Step 1: Establishing an ESG point of contact

The recent emergence of the Chief Sustainability Officer (CSO) role has strengthened sustainability strategies. This has led to the formation of dedicated teams tasked with driving ESG initiatives across business functions. More recently, organizations are leveraging IT solutions and enterprise datasets to support their goals and progress.

Positions such as ESG data director, ESG data analyst, and sustainability architect are also emerging. These professionals facilitate a deeper integration of sustainability within the IT landscape by building advanced digital sustainability capabilities.

A designated point of contact (PoC) in IT for ESG initiatives should serve as a crucial link between IT teams and sustainability efforts. This PoC ensures consistency and alignment between technological capabilities and ESG objectives, driving digital transformation across the organization. By appointing an ESG data specialist or tech project owner, businesses can better synchronize their sustainability strategies with IT advancements and roadmaps. This approach fosters a cohesive strategy for data modernization, treating ESG data not just as a compliance requirement but as a valuable asset that can drive business innovation and enhance overall ESG intelligence.

Step 2: Building ESG intelligence business cases

It's crucial to demonstrate how sustainability initiatives create value beyond just compliance. While studies show that decarbonization efforts can yield some large companies up to $200 million in annual net benefits, or that we're entering a new era of eco-digital transformation with expected business value creation (cost reduction, driving sales, reducing risk, building stakeholder value, enhancing competitive advantage), the real challenge is turning these opportunities into actionable strategies.

Developing a digital strategy for ESG (Environmental, Social, and Governance) is key to aligning IT investments with your organization's sustainability objectives. By engaging stakeholders across departments, a comprehensive set of use cases can be created that clearly defines how technology can support sustainability goals and generate business value in alignment with your organization's sustainability initiatives. This process involves identifying and prioritizing business cases across domains, including sourcing, operations, supply chain, sales, and HR.

Some concrete business cases to consider include the following.

Sourcing: Implementing specific tools to assess the Product Carbon Footprint (PCF) of ingredients can help ensure your portfolio meets targets for green products. This, in turn, can drive growth by aligning with customer preferences for sustainable options. It can also reduce scope 3 emissions, help achieve net-zero targets, and reduce the cost for carbon offsetting.

Finance and compliance/risk management: Transitioning from traditional spreadsheet-based reporting processes to automated ESG data management can save significant time and resources, hence reducing cost of producing multiple ESG reports while increasing accuracy and data assurance.

Sales and marketing: Sharing product environmental data with customers is becoming increasingly important. Providing transparent information about the sustainability attributes of products can enhance customer engagement and increase revenue. Tracking this data will help quantify the impact of your sustainable products on overall business performance.

Manufacturing and operations: Monitoring metrics such as energy usage, raw material consumption, and equipment performance allows organizations to identify areas for improvement that lead to significant operational enhancements. Real-time monitoring can reveal inefficiencies, such as excessive energy use during specific production runs or underperforming equipment, and thus reduce machine failures, downtime, and maintenance costs.

Supply chain: Businesses that rely heavily on supply chains often struggle with assessing ESG data, and particularly Scope 3 category 4 (third-party transportation and distribution) emissions. This is where the complexity of ESG data can often arise as you get multiple units to source your data and multiple emission factors can be applicable. Refining reporting processes can help uncover significant business benefits. For example, implementing route optimization strategies can reduce fuel consumption and emissions associated with transportation. Additionally, evaluating packaging practices to reduce size and material usage can lead to less waste and lower transportation costs.

Energy: Implementing an advanced strategy for renewable energy is vital to reduce Scope 2 emissions while potentially lowering their overall energy costs. Prioritizing the transition to renewable energy sources enhances sustainability credentials and mitigates the financial risks associated with fluctuating energy prices.

Human resources: Building a strong brand reputation around sustainability can attract top talent, enhance employee engagement and retention, and foster a culture that values sustainability.

This prioritization and identification process not only clarifies the strategic importance of each use case but also strengthens your business case for securing budget allocations. Engaging beyond the sustainability team is crucial; it fosters a shared sense of ownership and accountability across domains, ensuring that everyone understands the business value of investing in technology to enhance ESG initiatives.

Step 3: Bringing ESG's reality into business processes

While only 35% of organizations have integrated sustainability into their practices, they often struggle to capture critical ESG data within existing business processes. For example, a logistics process may focus on data such as price, weight, and supplier names while ignoring details like distance, the type of trucks, or the engine power source. Yet, this information is crucial for accurate carbon accounting, and it is also critical for future AI decision-making.

While some of this data may not be integrated into these processes, a significant portion, such as emissions data, is inherently tied to how a business operates. For example, transactional data like spending, materials design, business travel, and energy consumption can provide valuable insights into ESG performance. Without that data, an organization is making sub-optimal decisions, which is problematic today, but disastrous tomorrow if it is competing against others that leverage AI and these new information sources.

Many organizations treat tools used for data collection as primary source systems, but these typically pull data from actual source systems, not create it. This step advocates a proactive approach that identifies underlying source systems, understands the business actors involved, and maps data-transformation rules with quality controls, KPIs, data domains, and definitions.

For example, consider a process like invoice validation: it's crucial to ensure the financial team is checking invoices based on accurate data from systems such as water metering systems.

Mapping these data sources, systems, and KPIs establishes a "single source of truth" and ensures data is sourced directly from the systems of record. For instance, by collecting electricity invoices and comparing them with actual consumption, advanced analytics tools can use generative AI to identify discrepancies such as billing errors. The same data sets are used for compliance ESG reporting and can lead to cost savings.

This mapping process also improves auditability, allowing for more accurate and comprehensive ESG reporting, while reducing audit costs. With better documentation integration, internal or external audit teams can avoid sifting through hundreds of pages of process records, making audits more efficient.

Additionally, this step helps identify all relevant stakeholders and business actors at each stage of the process. This is crucial for supporting data governance activities.

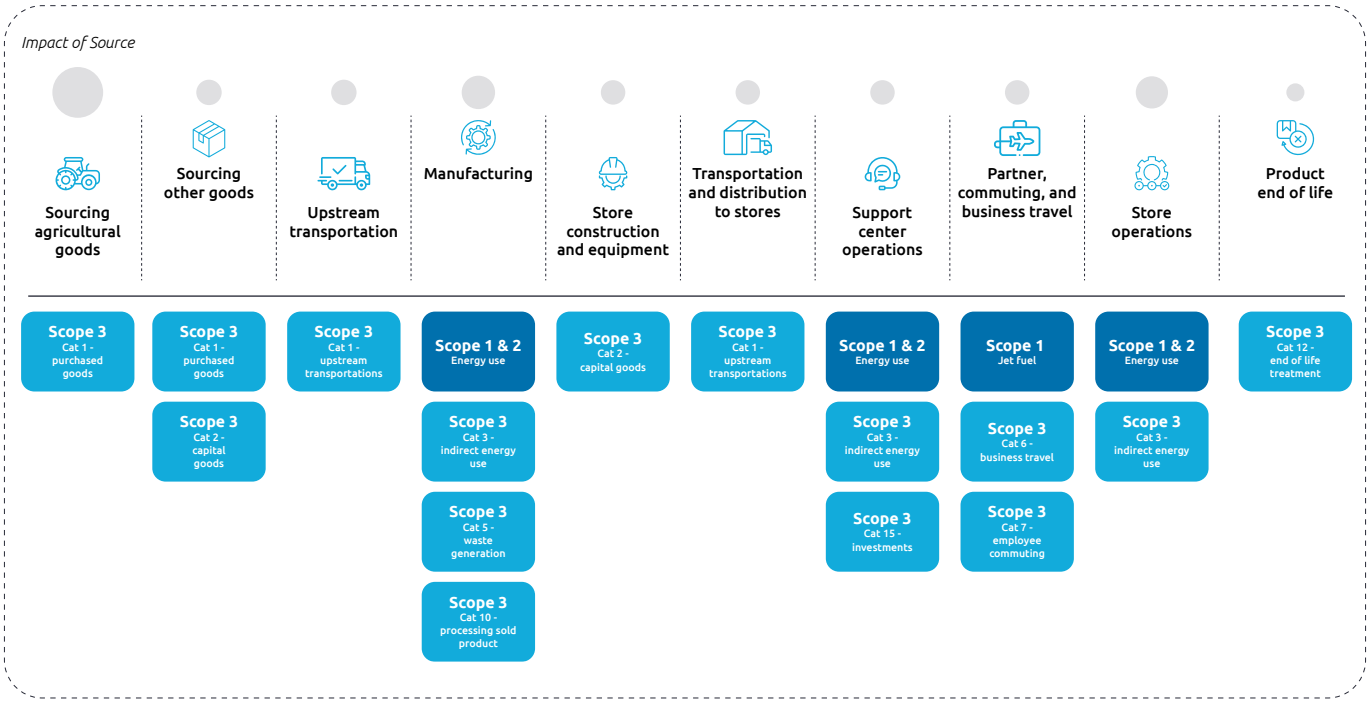

Illustration of mapping sustainability value chain with business processes of the organization

Step 4: Sustainability Data Hub–bringing ESG reality into business decisions and strategy

Two key documents need to be executed in this phase.

ESG data models

Leverage existing ESG data models from sources such as Microsoft or other organizations, and then customize them to align with your own data needs and specific industry. This offers several benefits.

Relevance to business processes: This exercise will also help you pinpoint which data are relevant to support specific business cases and processes. For example, which ESG metrics are tied to particular areas like carbon emissions or workforce diversity.

Identification of synergies: Building these models will help identify synergies across an organization, and deliver a deeper understanding of the data entities already in place within your data architecture and how they align with ESG goals.

Data domain alignment: Organizations are often structured around different data domains, each managed by a data steward (e.g., customer, product, supply chain, sales, HR). ESG data typically spans these domains. By mapping ESG data to your existing data structure, you'll ensure better integration and consistency across your business units.

Conceptual architecture

Numerous solutions support a wide range of business cases, so creating a clear conceptual architecture can unlock significant synergies. The benefits include the following.

Build versus buy assessment: A well-defined conceptual architecture will help in making build or buy decisions for missing capabilities, such as carbon accounting, CSRD (Corporate Sustainability Reporting Directive) or EU taxonomy templates, AI models for waste recognition, supplier data onboarding, Product Carbon footprint or lifecycle assessment (LCA) solutions, and more.

Source system identification: This will also clarify the source systems needed to collect ESG data. For example, ERP systems may be a key source for spend data or engineering bill of materials EBOM when calculating carbon footprints, while other enterprise systems may be relevant for workforce or supply chain data.

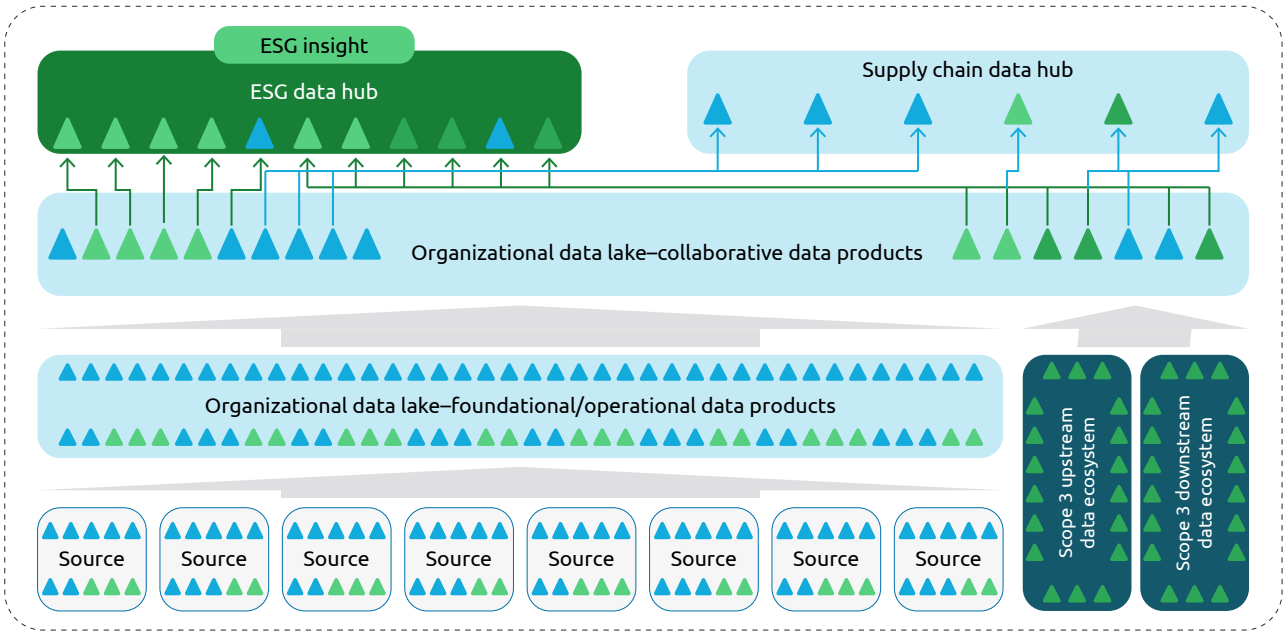

Illustration of ESG data hub architecture

Critically, the data architecture for ESG must extend and enrich the data architecture for the overall business. The goal is not to create a standalone system, but instead have a mechanism by which ESG data products are available to all parts of the business, and where ESG can leverage existing data products to deliver on the corporate objectives.

At the end of this phase, you will have a comprehensive understanding of the systems and technology capabilities required to support your sustainability strategy. This clarity will empower you to make informed decisions in your build versus buy strategy, ensuring that your IT landscape is aligned with your ESG goals.

Step 5: Leveraging advanced data and AI solutions

A solid process will focus on three key capabilities: data engineering, data management and governance, and change management in existing ESG business process operations.

These key capabilities should be implemented across five areas.

1. ESG data management

- **Data connectors:** Connectors support specific use cases, whether the data comes from SFTP, an ERP system, or external sources like MSCI or HowGood.
- **Pipeline monitoring:** Ensure continuous monitoring of data pipelines, including integration with external data sources.
- **Data quality rules:** Implement predefined ESG data quality rules (a combination of business and technical rules) to automate data cleansing as data moves through different levels of usefulness.
- **Industry-specific ESG data models:** Leverage an ESG data model that's customized for your industry, to ensure relevance and accuracy.

2. Carbon accounting

- **Sustainability data integration:** Enable seamless connectivity between the carbon calculation engine system and the Sustainability Data Hub, facilitating the reuse of sustainability data across various business cases to avoid the creation of siloes.
- **Emission data:** All emission-related data will flow into the gold layer, creating a curated ESG data set that combines sustainability data with enterprise data, enabling ESG intelligence with more insightful decision-making across the organization.

3. ESG trust

- **Digitalization for auditing:** Reduce the cost of audits by leveraging pre-built data quality dashboards and KPI data lineage. This will provide auditors with direct access to traceable data, reducing the need for traditional documentation and standard operating process reviews.

4. ESG insights

Customize analytics and AI capabilities using pre-built templates linked to your ESG data model. These can be tailored to provide insights into specific sustainability goals and performance metrics.

- **Food waste analytics:** Activate solutions to track and reduce food waste, ensuring that operational waste data feeds into your Scope 3 category 5 emissions.
- **Supply chain decarbonization:** Combine sales data with carbon footprint data for ingredients/products to prioritize and track progress on supply chain decarbonization.
- **Enterprise benchmarking:** Compare your ESG performance against competitors by integrating external ESG data providers and ESG sentiments in your enterprise data lake.
- **Logistics analytics:** Go beyond basic reporting with advanced analytics that combine sustainability data with logistics data, such as total volume transported, and distance traveled. This can help address key questions such as how per-vehicle emissions compare over time, how different transport types generate carbon, and the impact of distances (from supplier to plant or plant to dealer, for example) on emission numbers.
- **Industry-specific scenarios:**
  - **Automotive sector:** Navigate through various segments and brands, and define scenarios specific to your operations.
  - **Financial institutions:** Leverage ESG scoring systems across sectors to evaluate financial performance in the context of sustainability.
  - **Renewable strategy:** For any sector, integrate renewable energy strategies to track Scope 2 emissions and monitor progress through an ESG analytics dashboard.

5. ESG agentic collaboration

Your strategy for the future should involve the concept that collaboration and information exchange within a global organization, and beyond that to your scope 3 partners and customers, will require new ways of working which leverage AI within the context of both operations and 3rd parties.

- **ESG optimization agents** – the ability to have agents working within the context of operational systems, making decisions aligned to the corporate strategy and helping to actively optimize ESG decisions.

- **Scope 3 collaboration agents** – rather than shifting data all through the information supply chain, the future will enable us to deploy ESG agents up and down stream in ways that can support making much faster and more accurate decisions, while retaining IP protection on the core data information.
- **Externality Technology Agents (ET agents)** – you should beginning planning today for "AI at the edge" which moves beyond traditional operational technology (OT) and looks as well at the external factors that impact your business and your ESG goals. Technologies such as AI-RAN are already showing how ET can be deployed in the field.

Our references, from strategy to execution across industries

Global Coffeehouse: ESG reporting architecture design

In anticipation of upcoming regulatory requirements and the need for deeper insights into ESG performance, Global Coffeehouse has partnered with Capgemini to design a robust ESG reporting architecture and implement a Sustainability Data Hub.

We gathered influential insights from various internal stakeholders and the client's global operations team to define an implementation roadmap for a product-based architecture for the Sustainability Data Hub. Conducting Architecture Review Board (ARB) sessions enabled transformational change for the client's business model through an enhanced ESG reporting platform. Our deliverables included a gap analysis to identify and address discrepancies between the current and future technology strategies, and recommendations for technology and business architecture solutions with best practices. This comprehensive approach ensures that the client meets regulatory requirements while driving sustainable business growth in sustainable strategy such as green sourcing, greener store, sustainable packaging, and green products.

Global oil and gas brand: Digital strategy for ESG

Our client, a leading oil and gas company, is accelerating its sustainability ambitions by transitioning from a traditional oil and gas company to a leader in decarbonization with strong net-zero objectives to be reached by 2050. Despite having numerous ad hoc initiatives and systems, they face challenges with weak sustainability management reporting, lack of data integration, high costs, and manual ESG data processes.

We identified and prioritized 20+ use cases based on the client's strategic ambitions and ESG priorities, developing a comprehensive roadmap highlighting technical enablers allowing fully automated ESG reporting and regulatory compliance. Through this assessment and roadmap, the company derived both strategic and operational benefits, such as better mitigation of risks related to environmental impact and social responsibility, and improved governance practices contributing to enhance their brand value and reputation while ensuring a strong business case for digital sustainability.

Large telco company in Nordics: Shaping a build versus buy ESG platform

With over 220 Environmental, Social, and Governance (ESG) Key Performance Indicators (KPIs) to manage, the company was challenged by a decentralized and complex IT ops and apps estate. Thanks to our structured evaluation of ESG solution vendors, we proposed a build versus buy approach, leveraging their existing capabilities both in front- and back-end and prioritizing KPIs and MDR (from CSRD). Through a simplified data foundation and tailored ESG management platform, they benefited from faster GTM on CSRD compliance which helped the company ultimately achieve 60% of their priorities by Q3.

Global leading cruise holding company: Building ESG data hub

For the world's second-largest cruise line operator, to support the disclosing of 83 ESG metrics, we have implemented an ESG data hub and carbon accounting solution designed to automate ESG data ingestion, and perform data quality checks and carbon calculations collection, while conforming to data governance audit and SOX-like compliance controls. Building from 25+ source systems across four entities, our solution integrates 100+ data sets with 630+ data attributes, ranging from energy consumption to wastewater and travel. Through advanced data management tools, we helped deliver comprehensive insights enhancing decision-making capabilities that led to solid foundations in compliance and risk management. Leveraging our Data and AI Suite for Sustainability (Sustainability Data Hub) asset, we helped them ensure data trust and controls through robust security measures and regulatory compliance. This led to time and cost reduction of their reporting process while ensuring consistent and reliable new ESG data reality. Additionally, its scalability and flexibility allow for additional AI use cases enabling new business value outcomes.

Conclusion

While your organization is likely already evaluating technology tools to support its sustainability agenda – particularly to meet CSRD or other ESG disclosure requirements – it's crucial to look beyond just regulatory compliance. Yes, tools are necessary, especially since Excel can't handle XBRL tagging, and is not SOX compliant either, but building a centralized Sustainability Data Hub is more than a technical solution; it's a strategic initiative that requires cross-functional collaboration, and can drive greater business value through enhanced ESG intelligence.

These five steps can unlock ESG intelligence, streamline reporting processes, and ultimately contribute to a more sustainable future. In order to stay competitive and meet the evolving demands of stakeholders, Capgemini can help you seize the opportunity to transform sustainability efforts and harness the power of ESG data to drive long-term business success. As organizations strive to better leverage AI in their ESG and traditional decision-making processes, the value of data representing the "externality" of a business will become a significant competitive advantage. Companies that comprehend the true costs and, consequently, the true optimizations will be able to harness AI more effectively, gaining greater leverage over their competitors and the market.

Building from our proven track record in driving sustainable transformation–from strategy to execution–for major industry players, we can help you identify the most valuable data use cases within your business value network. We believe in fostering profitable and competitive businesses that serve the planet as well as their customers. Together, we cultivate a mindset that transcends traditional business models, moving beyond business-to-consumer or business-to-business, all the way to Business to Planet.

For more information, contact Vincent de Montalivet.

About the author

Vincent de Montalivet is Senior Director - Sustainability Transformation, at Capgemini, based in Chicago. Vincent leads the Global Sustainability Practice for Data & AI Portfolio along with North America Sustainability GTM.

With a background in Sustainability Strategy, Engineering and Architecture, Vincent has been instrumental in driving sustainability digitalization efforts and transformation programs within major organizations across industries while ensuring tangible business outcomes.

Explore his contributions

- Capgemini Research Institute: Green or mean? Separating the myth of AI's carbon impact from the reality
- Decarbonization: The critical role of data in realizing your net zero ambition
- Net-Zero is a foundation for Data Driven-Transformation
- Make your brand stand out with AI-driven eco-responsibility
- How AI will make the stuff we need to survive the next 30 years

In French

- HBR France: Pour améliorer la performance de votre entreprise, maîtrisez vos données ESG
- TEDX France : L'I.A. pour combattre le changement climatique

About Capgemini

Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, generative AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2024 global revenues of €22.1 billion.

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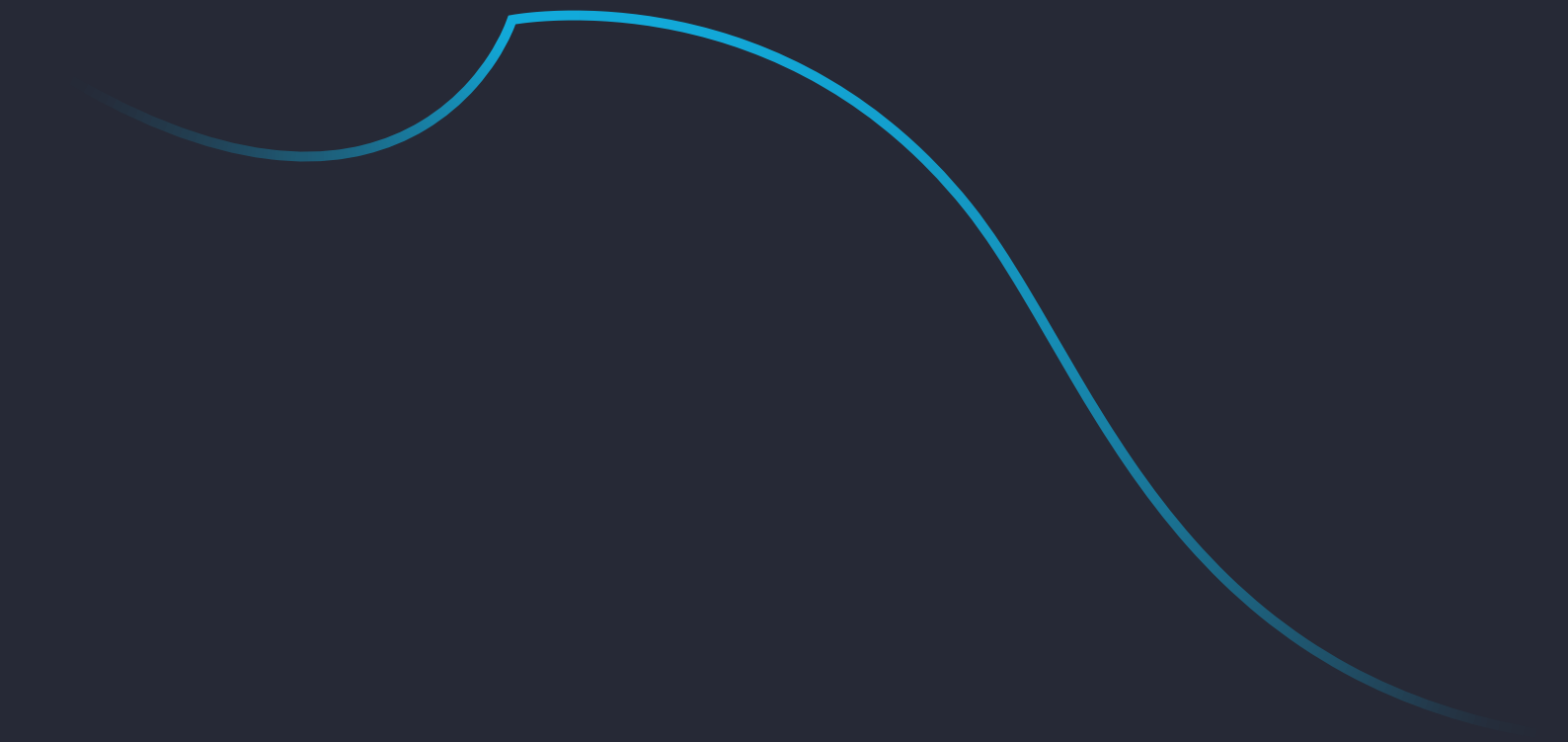

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