



Digitization and Decarbonization in the new reality





At the 2020 World Economic Forum (WEF) in Davos, KPMG and the International Business Council unveiled a unified corporate responsibility reporting framework organized around the UN Sustainable Development Goals (SDGs). Since then the world fell into turmoil with the onset of COVID-19. This disruption has prompted companies to accelerate their digitization efforts to shift to work-from-home, manage customer expectations, and reduce long term costs.

At the same time, companies have also been forced to begin a period of intense introspection regarding the future of their businesses and the viability of their business models. For many companies, the last few months were a wake-up call regarding the significant deficiencies in their enterprise risk management plans and approach to risk modeling. One of the most pressing risks coming into focus as a result of COVID-19 is climate risk and the associated challenges to maintain effective corporate operations in a climate-impacted world. Climate risk has long been a topic of discussion among corporate officers, but corporate actions are often limited to basic mentions of associated risks in the disclosures section of corporate annual reports. In this paper, we examine the interconnectivity between digitization and decarbonization in the new reality with specific reference to the implications for supply chains.

COVID-19 has the potential to be the catalyst motivating executive leadership to consider and implement strategies to mitigate climate impacts and decarbonize operations. This runs counter to the traditional assessment of market responses that theorizes Environmental, Social, and Governance (ESG) focused initiatives would be shelved and environmental regulations loosened to enable countries and companies to better weather the resulting economic storm and stimulate the Economy. However, at record-breaking

levels, companies are driving the development of large-scale corporate decarbonization initiatives and shareholders increasingly expect holistic ESG initiatives, including robust climate impact assessments and decarbonization plans. The regulatory landscape is now catching up with these expectations, with the European Union leading the way. These actions are the leading edge of a new normal in corporate strategy and performance linked to corporate sustainability performance.

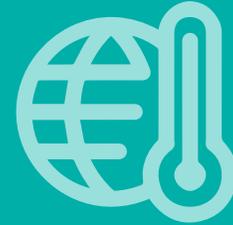
Corporate decarbonization at-scale is challenged by a perceived lack of accurate, objective, and accessible data. We believe that the acceleration of digitization and integration of digital trust practices in a post COVID-19 world will provide the tools and solutions necessary for decarbonization to gain a robust foothold in Corporate operations.

While the shape of this new reality is still emerging, our research and market insight has found that one clear opportunity for this digitization enabled acceleration could be tied to a COVID 19-driven desire to decouple and diversify global supply chains. The value offered by digital connectivity will encourage, and perhaps even mandate, substantial modifications to supply chain mechanics. These changes include sustainable sourcing, the ability to evidence a COVID-19 'free' chain of custody, and more integrated mechanics for the capture and aggregation of data across a broad range of performance metrics including embodied energy and emissions.

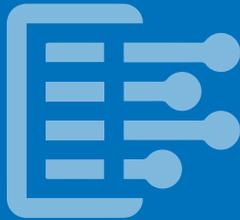
We believe this desire can and likely will have a profound impact on the geographic structure and delivery model of global supply chains, and result in the near-shoring and on-shoring of supply chains. This desire further provides companies with a once in a generation opportunity to make major performance improvements across more than one operational domain of their supply chains including:

- Improve traceability / transparency of products and supply chains
- Improve Speed to Market
- Reduce carbon impact of operations and shipping
- Improve (and evidence improvement of) working conditions and social benefits

As the world questions what comes next, KPMG is asking how the nexus of decarbonization and digitization may be factored into the new reality. All companies will need to develop new plans and approaches, implement them now, and implement them well. We have summarized these opportunities in the below Q&A.



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Q How does COVID-19 shift how companies manage supply chain risk?

A Across sectors COVID-19 laid bare a number of gaps in enterprise risk management, particularly as it relates to a corporate supply chains. Healthcare companies managed through shortages of Personal Protective Equipment (PPE) like N-95 face masks and ventilators, while consumers visited stores filled with empty shelves of critical staples. A recent survey by the National Association of Manufacturers found that 35% of respondents were already facing supply chain process disruptions in their business.¹

The KPMG Supply Chain practice encourages companies to evaluate potential contingency plans for their supply chains and consider how each of their suppliers may each have their own respective challenges.² In a world of imperfect and asymmetric information this is easier said than done. What we do know is that the implementation of digital trust practices may help bring an additional layer of transparency and clarity to the supply chain process.

Accelerating towards digitization is all the more crucial when risk factors like COVID-19 mean lives are potentially on the line when essential supplies are delayed. It is not a stretch to say that we are now seeing a convergence of COVID-19 management with ESG considerations. Truvalue Labs' Artificial Intelligence driven analysis found that COVID-19 currently accounts for 60% of daily ESG information captured and that employee health and safety (EH&S) and labor practices currently represent about half (49%) of the references.³

Companies that develop informed risk management plans now and execute them well, will be better prepared to understand and manage the next risk that comes around the corner, whether that is a pandemic, natural disaster, or climate change-linked event.

Q How does the USMCA trade agreement enable increased and accelerated adoption of digital trust practices?

A COVID-19 is another layer on top of a quickly changing international trade landscape. China is and has been the US' largest trading partner. However, Mexico and Canada are also significant trade partner actually representing 14.3% and 12.8% of total imports respectively as compared to China's 18.1% in 2019. In fact, Mexico has quickly been catching up with China over the past three years and the passage of the USMCA trade deal could continue to accelerate this trajectory. In the 1st quarter of 2020, Mexico temporarily passed China as the US' largest trade partner.⁴

Driven by a historic desire to shift and diversify supply chains, coupled with a more trade friendly regulatory framework under the USMCA, we're at an inflection point where it is possible to fundamentally alter the composition and diversification of America's supply chains to include a broader, more receptive coalition of trade partners at both the supplier and country level.

This is a once in a generation, perhaps once in a lifetime opportunity to reorganize and restructure the inner workings of the global supply chains. There are significant opportunities to make systemic changes, which could improve the transparency and traceability of supply chains, while reducing their environmental impact. Companies need to leverage this rare opportunity to enhance supply chain performance while reducing the associated environmental impact

This introduces new opportunities for the implementation of digital trust practices, which provide the trusted, immutable, independently stored and corroborated source of the truth. This data trail improves business and consumer confidence in the quantity and quality of goods, produced, shipped, and delivered, as well as the emissions associated with those goods across facets of the related supply chain.



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80
million tons

**Amount of
containerized
cargo the US
brings in by sea
each year.**

Q How can on-shored and near-shored supply chains reduce carbon emissions?

A Globally, freight and shipping account for more than 3% of total global carbon emissions. This value is expected to increase over the coming decade to meet growing consumer demand and changing shopping patterns.⁵ This increase is driven in part by shifting consumer shopping preferences, as consumers increasingly prefer (and expect) a direct-to-home based consumption model. The traditional hub and spoke distribution model for consumer goods is replaced with a massive, distributed network of individual drop-off points to satisfy consumer demand.

The globalization of trade and the corresponding distribution of supply chains around the globe also led to the off-shoring of carbon emissions, and the subsequent distribution of the responsibility for those emissions. For example: if all distributed trade was factored into the US carbon footprint, the current 9% increase in emissions from the 1990 baseline would increase to 17%.⁶ The US is currently the top global importer of containerized cargo, bringing upwards of 80 million tons of good by sea per year.⁷ The emissions associated with this flow of commerce are substantial and often overlooked as Scope 3 emissions at the end-consumer level.

There are efforts underway at the international level to encourage decarbonization within the sea shipping industry. However on-shoring and near-shoring of supply chains present new and exciting opportunities to mitigate and/or avoid these shipping related emissions all together. The on-shoring movement also empowers companies to leverage their current investments into supply chain digitization to gain new visibility and transparency into the chain of custody for their carbon footprint. This transparency provides exciting opportunities to not only improve the perceived safety and quality of products, but also evidence the embodied carbon of individual products.

Q How does digital trust enable more effective carbon accounting? Or stated differently, what is the current cost of trust in carbon accounting?

A Embedding digital trust at scale into the 375 million tons of US imports arriving by truck, the 177 million tons of rail based imports, and the 80 million tons that are imported by sea (2018) could provide companies with enhanced visibility into their supply chain, as well as the emissions associated with all phases of their supply chains from production to shipping.⁸

To determine supply chain emissions, corporate sustainability managers and ESG committees must navigate a patchwork of greenhouse gas (GHG) reporting protocols using a combination of manual calculations, rudimentary software packages, and home-grown solutions to track and calculate carbon emissions.

To report on these numbers to the myriad corporate sustainability focused organizations, the carbon inventory must then be audited / validated, preferably by an independent third-party. Within the carbon inventory there is then further variation across companies on how to account for Scope 3 emissions. Scope 1 and 2 emissions are directly controlled by companies, such as electricity and natural gas usage at the company's offices, production facilities, and warehouses. Conversely, Scope 3 are indirect emissions associated with the products, services, and actions of other organizations. Companies do not directly control their Scope 3 emissions, as they are managed by the suppliers of various products and services, such as airlines offering flights or the energy usage at the widget factory of a key supplier, but they are considered as part of the company's ESG performance.

Digital trust technologies like blockchain, are designed to improve the speed and ease with which non-financial performance metrics like carbon emissions can be tracked, aggregated, and reported. Enhanced data management enables suppliers to provide a more accurate quantification of their emission and allow companies to take the third-party attestations of Scope 3 emissions at face value. Instead of dedicating resources to manage the multiple calculations and reporting contacts at suppliers needed to manage Scope 3 emissions, solutions like blockchain can provide the needed trust and accountability to support more accurate and timely reporting.

We envision a future where carbon accounting solutions allow companies to report their Scope 3 emissions as readily and easily as they currently read utility bills to capture and calculate their Scope 1 and 2 emissions.

These foundational data tools will in turn enable broader systematic ESG initiatives where companies may better understand the asset valuation impact of climate risks and their potential operational exposure to future climate risks posed by their supply chain and products.



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– Larry Fink,
CEO Blackrock

Q How does ESG performance lead to stronger company performance and increased resiliency?

A Blackrock CEO, Larry Fink’s 2020 letter to shareholders declared that “[t]he evidence on climate risk is compelling investors to reassess core assumptions about modern finance.”⁹ Companies are increasingly ignoring ESG considerations are their own peril, as there is a growing body of market data and research evidencing the financial resiliency of strong ESG performers during periods of crisis, including the current COVID-19 crisis.

A company’s performance and response to COVID-19 is now becoming a litmus test for understanding the potential pitfalls associated with their current strategy and approach to risk management. Companies with strong ESG performance consider the needs of diverse population of key stakeholders, not just their shareholders. Per Chief Market Strategist at Chaikin Analytics, “Investors are starting to look to the other side of this initial coronavirus situation and maybe looking for the companies that did right by their employees, that did right by their supply chain.”¹⁰

As a further example of the importance ESG performance to companies and countries around the globe, the Canadian government is now stipulating that companies seeking COVID-19 support funds must commit to publishing annual climate-related disclosure reports. The reporting must include how the company’s future operations will support environmental sustainability and related national climate goals.”^{11 12}



COVID-19 is forcing decades of digital transformation into a few short months, and revealing the changing nature of how companies will manage their flow of goods, while meeting shareholders expectations linked to environmental impact mitigation and community engagement.

We believe there are synergies to be gained in layering decarbonization and ESG performance into current recovery plans, operational ambitions, and future risk management strategies. To that end, the tenets of digital trust strengthen this movement by establishing a critical layer of trust and traceability into corporate sustainably data, allowing companies to more effectively and efficiently meet the needs and expectations of key stakeholders.

KPMG Sustainability Advisory Services and Innovation and Enterprise Solutions have been joining forces with market and industry leaders to explore digital trust enabled decarbonization and ESG solutions and are here to help you understand your unique business requirements. Future papers in this series will continue to explore the questions we've asked here and how your business may be best prepared for the new reality. Contact us below to learn more or let us know what questions are on your mind.

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Contact us

Arun Ghosh

Principal, US National
Blockchain leader
arunghosh@kpmg.com

Katherine Blue

Principal, KPMG Americas
Sustainability Services
Network Leader
kblue@kpmg.com

Michael Hayes

Partner
Global Renewables Leader
KPMG Ireland
michael.hayes@kpmg.ie

Kirk-Patrick Caron

Manager, Sustainability
Advisory Services
kcaron@kpmg.com

Alistair Hall

Associate, Transformation
Delivery Services
alistairhall@kpmg.com

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