

Investing in Digital Sustainability

Once polarizing ends, the intersection of digital and sustainability is proving to be the Anthropocene's answer to reversing climate impact. Anticipating upcoming events on the global trajectory, it's time for businesses to back a new world that's sustainably digital.

KIN+CARTA





With the growth of engagement with digital, we've now got to think about the scale of the impact in a different way. If your digital product has an aim to improve something, that improvement needs to be fully stacked and baked into how you do it as well as what you're doing."

Morgan Kainth,
lead strategist at Kin + Carta



Is ‘going digital’ the same as ‘going green’?

The dawn of Industry 4.0 ushers in a new way of human governance on the planet. The fourth industrial revolution is coalescing with the environmental revolution as sustainability emerges as a global priority.

But is ‘going digital’ the same as ‘going green’? While this appears to be the prevailing attitude of a society racing towards an automated and connected vision of the future, the haste to progress has left in its wake the unforeseen environmental consequence of scaled adoption.

At 3.7%, the digital sector contributes the same level of CO2 emissions as the aviation industry, revealing how tech is really the elephant in the room when it comes to sustainability.¹ The pandemic prompted an increased uptake of digital solutions and expedited a move towards mass digitalization as everyday life was forced to move online. Across the world, screen time rocketed and a world constructed by fibres and algorithms became the new normal.

¹ <https://www.bbc.com/future/article/20200305-why-your-internet-habits-are-not-as-clean-as-you-think>

“The more tech progresses, the more we have a chance at saving the planet.”

Yeshna Mistry,
sustainability manager
at Channel 4

“Start with that wider definition of sustainability as a kind of roadmap about what needs to be done. There’s no other way we can make it work without the digital backbone.”

Dan Wells,
partner at Foresight Group



Why act now?

As digital technology evolves, so does its environmental footprint. To date, the environmental impact of the digital sector has mostly flown under the radar. But this is likely to change as we head towards high-profile events such as COP26 in November 2021 and continue on our journey to net-zero by 2025.

As awareness of tech's impact on the environment grows, regulation is likely to follow. Learning from other industries that are already responding to the climate crisis can help to inform the best course of action. Sustainable digital transformation will help companies rise up to planet stewardship and drive the sustainability conversation in order to reach goals. More than ever, now is the time for urgent iteration, testing, and application.

“Digital can still be the ‘what’ to going greener, but we also need to focus on the ‘how’ to make sure that the technology we implement and use isn’t doing unforeseen damage to our planetary future.”

Morgan Kainth,
lead strategist at Kin + Carta



The big squeeze

Pressure on businesses is coming top-down and bottom-up. Stakeholders are demanding transparency and customers are driving new ethical business trends. The dial shifted when Exxon Mobil investors voted an activist hedge fund² on to the board, setting a new precedent for accountability. On the ground, people are demanding more accountability – from DEI³ to pensions⁴ to supply chains⁵. Consumers and shareholders alike are gunning for hyper-transparency, and green-washing will not be tolerated. On top of this, a paradox beckons. While innovation is driven by cutting-edge new technologies, producing more would only increase obsolescence.

How can businesses strike a balance between the benefits and impacts of new digital innovation, pleasing shareholders and customers at the same time?

“Transparency is key – you will be found out if you make it up.”

Dan Wells,
partner at Foresight Group

² <https://www.reuters.com/business/sustainable-business/shareholder-activism-reaches-milestone-exxon-board-vote-nears-end-2021-05-26/>

³ <https://www.cnn.com/2021/04/30/diversity-equity-and-inclusion-are-important-to-workers-survey-shows.html>

⁴ <https://employeebenefits.co.uk/81-want-more-transparency-over-pension-investments/>

⁵ <https://www.mckinsey.com/industries/retail/our-insights/what-radical-transparency-could-mean-for-the-fashion-industry#>



The five pillars of sustainable business transformation

We've outlined five keystones to achieve effective and long-term impact.

01

Prioritize measurement:
We can't manage what we can't measure

02

Build infrastructure:
The glue that holds together a distributed energy system

03

Reduce impact:
Design for circularity and to give more than we take

04

Democratize responsibility:
Everyone can play a part in improving performance

05

Mindful use:
Be intentional and mindful about how and when we use technology



01

Prioritize measurement: Data is the backbone of everything – we can't manage what we can't measure

In this post-truth era where misinformation is rife, there's a crucial need for people to be informed and brought along the business journey. By keeping stakeholders, decision makers and the public up-to-date with the goals and achievements, expectations and perceptions can be better managed.

Measurement is fundamental. Not only does it help businesses to understand the ecological landscape, but it also serves as testament to positive impact. 77% of IT decision-makers don't completely trust the data in their organization for timely and accurate decision making.

Building data integrity is crucial, as it allows companies to construct, articulate, and visualize what good looks like.



**“For something to change,
you need to be able to
measure it.”**

Hortense Bioy,
global director of sustainability research
at Morningstar

“The holy grail is data.”

Hortense Bioy,
global director of sustainability research
at Morningstar

01.1

Data can help sustain trust and retain customers



Trust is most notable when it's broken or lost. With access to so much information, data can help to sustain consumer confidence. The pandemic has driven eco-literacy, with 70% of people agreeing that they have become aware of how human activity impacts the climate since the outbreak of COVID-19.⁶ With this in mind, environmental data has considerable sway over perceptions, aspirations, and actions.

While data gives way to regulation, it also paves the way for optimization. With more consumers seeking third-party claims to validate a product's ecological footprint, introducing independent standards could play a significant role in establishing consumer confidence and influencing positive behaviors.

⁶ The Pandemic is Heightening Environmental Awareness by BCG, 2020. <https://www.bcg.com/publications/2020/pandemic-is-heightening-environmental-awareness>

Case studies



TRACR

Tracr – whose clients range from De Beers to Signet Jewelers – is a program that uses a combination of AI and blockchain technology to trace every stone. By tapping into seamless digital tools, it enables end-to-end diamond traceability from discovery to retail. Leaning on emerging technologies such as the Internet of Things, artificial intelligence, blockchain, and high-grade security and privacy, Tracr aims to cultivate trust for the diamond industry by assuring people of the environmental impact and provenance of natural diamonds.

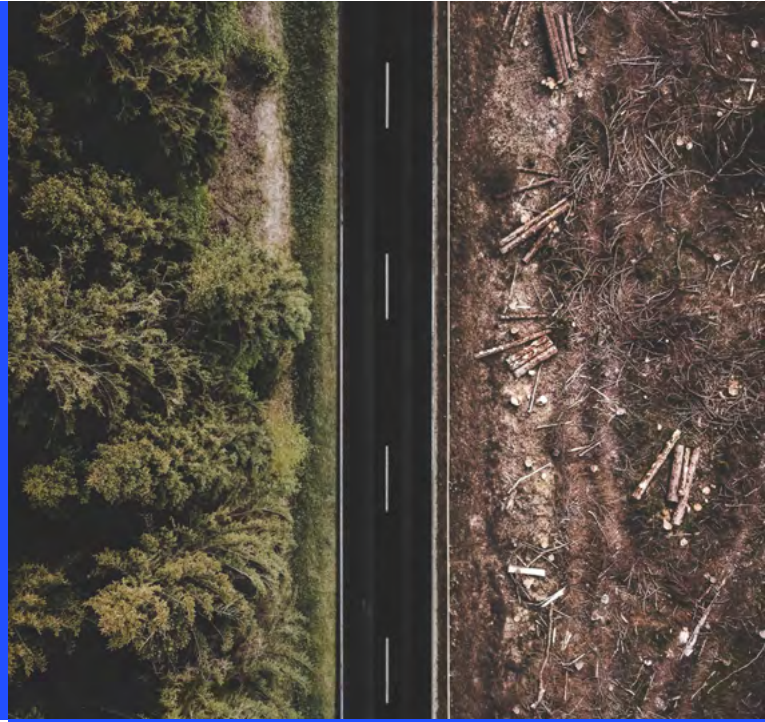


GARNIER

Garnier is set to launch a digital tool that enables UK customers to track the environmental and social impact of its haircare products. The company will use data that reflects emissions, water, and biodiversity, grading each product accordingly. Consumers can access these grades on a website. A similar tool was launched in France last year, attracting 2.6 million visitors.

01.2

Visualizing data can help get the message across



Case studies

Powered by impactful imagery, data visualization bring people closer to issues, filling belief gaps with concrete evidence. When it comes to investment, ESG is often considered a risk, so introducing tools - such as aerial photography, which is an immediate reflection of humans' effect on the environment - could mitigate stakeholder doubt. However, measurement tools for cross-sector analysis are still in their infancy and could be made more comprehensive and accessible.



THE ALAN TURING INSTITUTE

The [London Air Quality](#) project taps into machine learning algorithms, data science platforms, and statistical methodology to accurately forecast air pollution across London. Given these hyper-local estimates and associated uncertainty, the group then develops algorithms and optimization techniques to inform citizens and help design and evaluate government policy.

01.3

Data can help preempt problems and optimize production



Case studies

Data analysis can help a business to understand how it's performing. It can also be used to future proof growth by recognizing patterns and identifying potential issues. Billions of investment⁷ is being driven into preventative medical innovators that aim to use data to protect health prior to sickness. This same reasoning can be used cross industry. In agriculture, enhanced insights can improve production, and as we head up the supply chain, data can help shops and restaurants to manage food waste. Improving the frequency and integrity is key if more accurate predictions are to be made.



CORTEVA AGRISCIENCE

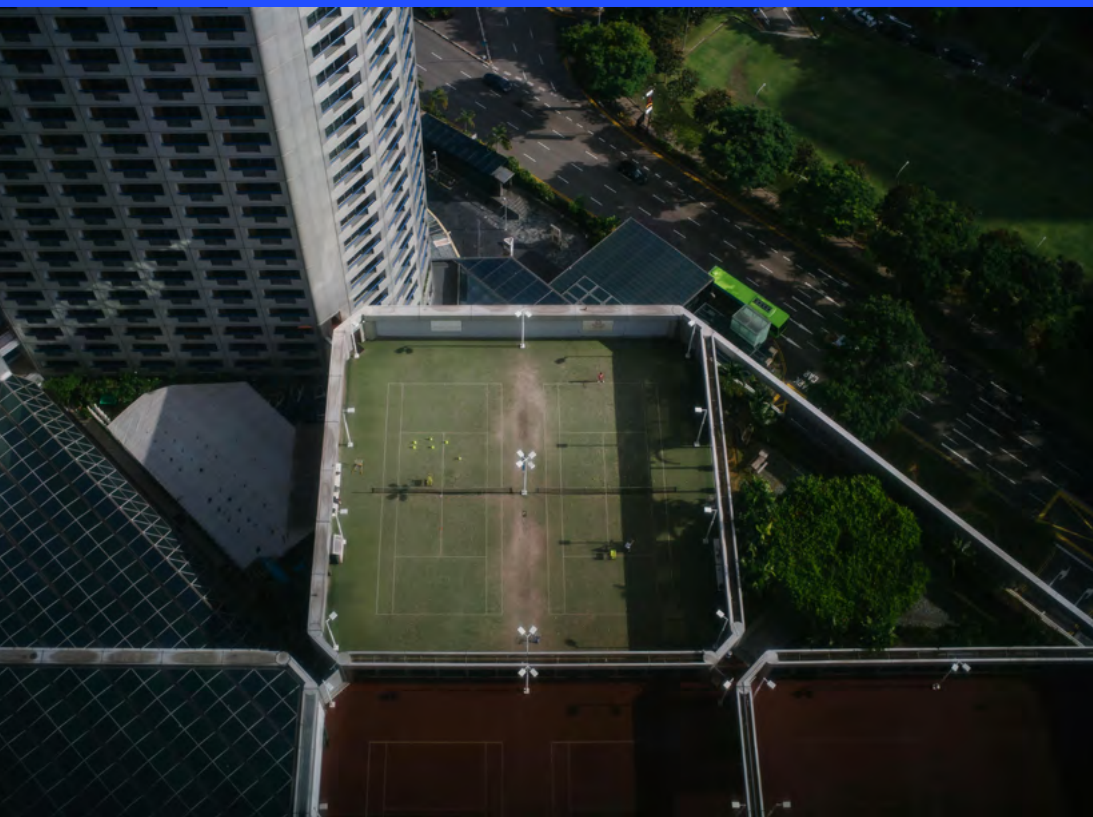
Corteva worked with Kin + Carta using Microsoft Azure to create Blueprint Mobile, an easy-to-use mobile application that supports production agronomists by enabling them to collect in-field notes, provide in-season crop management, and enhance their decision-making abilities. The solution saves time for agronomists, provides more real-time and accurate forecasting to production leadership, and helps produce higher yields from contracted growers.

⁷ <https://www.fiercebiotech.com/biotech/flagship-pioneering-flags-down-another-2-2b-to-expand-preemptive-and-pioneering-medicine>



Within the 17 sustainable development goals, there are about 260 specific metrics that organizations are being asked to report on. Some are very easy to measure and some of these are very difficult. On an organizational level, start with the current state assessment because it's highly likely that the technology 1.0 choices that were made were not optimized for sustainability."

Morgan Kainth,
lead strategist at Kin + Carta



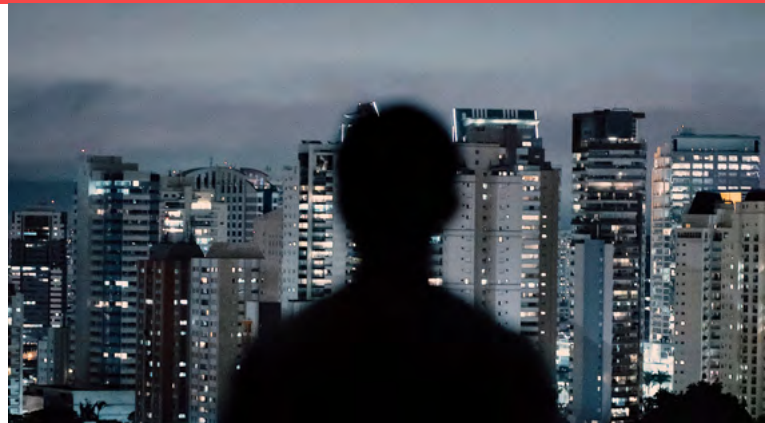
02

Build infrastructure:

If done right, digital holds the key to a sustainable future

Fragmentation is the biggest challenge facing businesses across sectors. Many organizations are dealing with architectural difficulties arising from complex mixes of legacy and enterprise systems, platforms, and applications. To flatten the disparity curve, there's a need for a unifying digital tool to make energy and resource distribution more energy-, cost-, and labour-efficient.

The pandemic was a catalyst for rapid digitalization. Now at a crossroads, businesses are expected to rethink the principles of technology use at internal and external levels. Digital tools that can capture the value of data to drive more sustainable solutions remain fairly untapped and should be more widely adopted. For example, AI intervention in food waste could save up to \$127 billion a year by 2030.



“Typically, people think of digital technologies as enabling efficiencies, and thus subject to Jevons Paradox. However, there are a broader range of capabilities that increase efficiency without increasing energy, from tracking and verifying to digital twinning.”

Susanne Baker,
associate director of climate, environment,
and sustainability at Tech UK

02.1

Unify legacy tech to make it more cost-, energy-, and labour-efficient



For many businesses, their tech stack has been built gradually throughout the time they've been in operation. Larger and older companies are likely to have accumulated a mixture of systems, leading to complex operation and output processes. Legacy tech has rendered businesses inefficient and, as consequence, unsustainable. And there's a human side to the issue as well. The State of Software Happiness report found that 50% of employees are unhappy at work due to the software tools they're using, and almost 25% said that they've considered leaving their jobs because of the software they're using in the workplace.⁸

“In many ways, ‘digital’ and ‘sustainable’ complement and accelerate each other and should be seen as inseparable growth drivers.”

The Intersection of Digital and Sustainable Transformation: How Important Are Digital Infrastructure Strategies as Enablers for Sustainability Efforts?

[Report by the IDC](#)

⁸ <https://learn.g2.com/state-of-software-happiness-report-2019>

02.2

'Digital' and 'sustainable' are inseparable growth drivers

Tech and sustainability are intertwining forces – but as much as they are symbiotic to each other, some digital solutions are better for the environment than others. As noted by Martin Townsend, the global head of sustainability and circular economy at the BSI Group, tech is an enabler of sustainability, and they should be seen as one and the same. As many organizations move from siloed ESG initiatives to more holistic strategies, sustainable digital infrastructure needs to be factored into the transformation process.



**“ESG is so massive that tech
needs to pull it together.”**

Yeshna Mistry,
sustainability manager at Channel 4

03

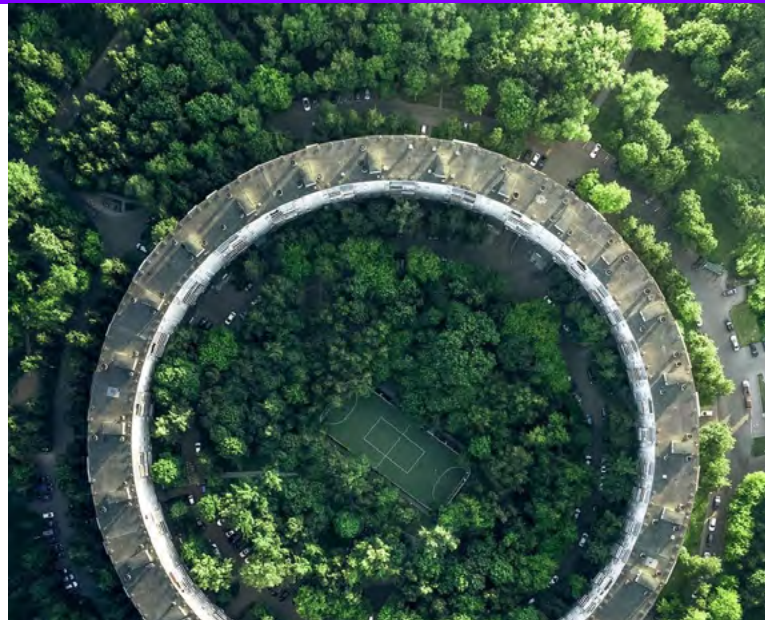
Reduce impact: Design for circularity to give more than we take

The linear system hasn't worked. As legacy systems are rendered obsolete, they inevitably turn into e-waste, which amounted to approximately 54 million metric tons worldwide in 2019⁹. But e-waste isn't just generated through hardware – the energy used to backup data comes with its own environmental footprint. This is only snowballing as cloud storage surges in popularity. With AI, machine learning, and real-time data as society's transformative forces, it's imperative we balance sustainability benefits with the environmental cost of technology.

Designing for circularity is one way to reduce waste. Transitioning to regenerative thinking, circular flows, and continuous production loops can mitigate hardware and software obsolescence. And this isn't a compromise either. By applying circular principles across the EU economy, there's potential to increase the bloc's GDP by 0.5% by 2030¹⁰. On the bright side, the circle isn't the only option. Flexible architecture that prioritizes connectivity, compatibility, and modularity can help businesses adapt to ever-evolving markets without compromising on additional resources.

⁹ <https://www.statista.com/topics/3409/electronic-waste-worldwide/>

¹⁰ <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN>



**“There are architectures that
you can build that are better at
delivering less carbon impact
than others”**

Morgan Kainth,
lead strategist at Kin + Carta

03.1

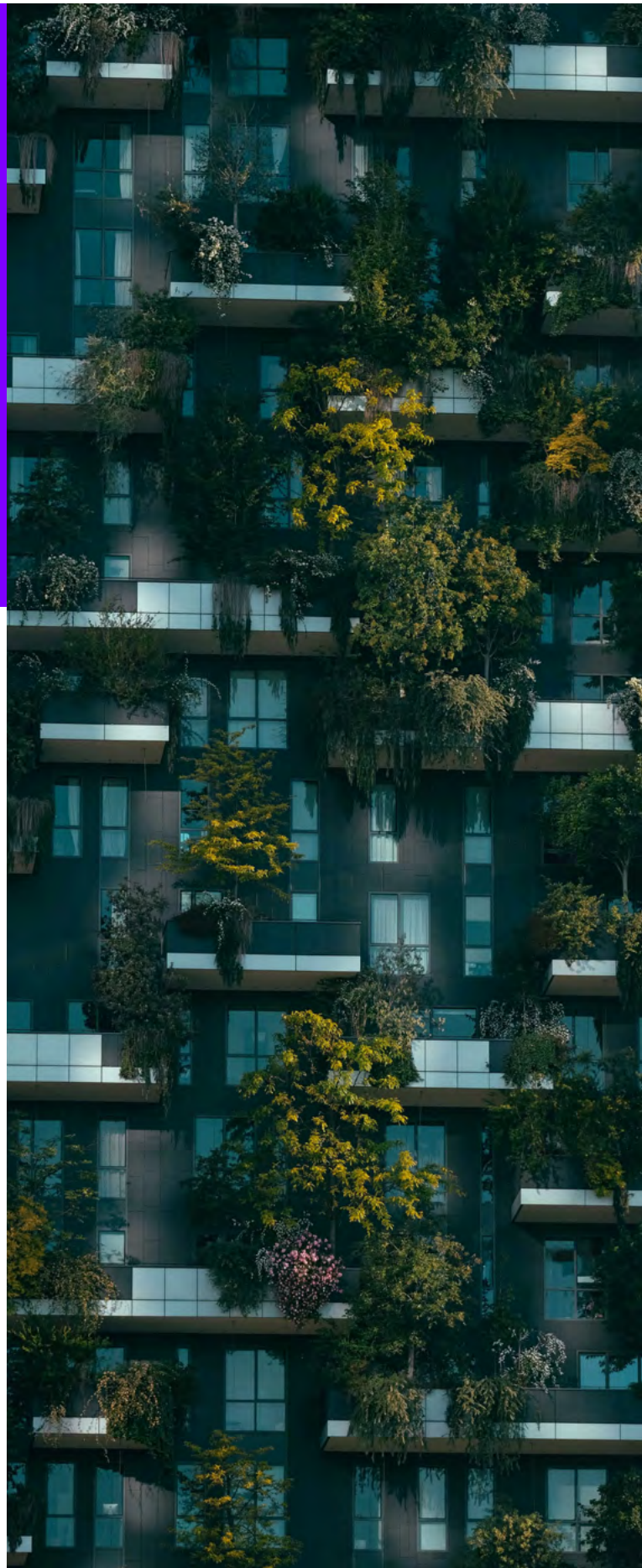
Think holistically about your impact – including your data stack

ESG is not just about energy. It requires a holistic strategy that accounts for the full supply chain, including the impact of hardware on the planet and people. There are a number of urgent and probable human rights impacts for the ICT sector to consider¹¹ – from conflict minerals to child labour – which is why assessment of a product's entire lifecycle is needed. Most producers are not offered sufficient incentives to make their products more circular.¹² By 2024, 75% of enterprises will be operationalizing AI, driving a 500% increase in streaming data and analytics infrastructures.¹³ A service design methodology can take into account sustainability trade-offs and surface them as a priority to clients. From here, you can set objectives, spot opportunities, allocate budgets, and design and launch services with sustainability at the heart. By choosing low-carbon digital solutions, businesses can build more transparent supply chains that match their social and environmental values.

¹¹ <https://www.bsr.org/en/our-insights/primers/10-human-rights-priorities-for-the-ict-sector>

¹² A New Circular Economy Action Plan For A Cleaner And More Competitive Europe by European Union Law, 2020

¹³ Gartner Top 10 Trends in Data and Analytics for 2020, Gartner, 2020.



03.2

Collaboration and partnerships along the supply chain will reduce impact



Case studies

The climate emergency is escalating, and the need to expand the classic 3Rs – reduce, reuse, recycle – into a more nuanced action plan is paramount. Reimagining a world where we take only what nature can regenerate will bring us closer to a sustainable future. Not only do circular and flexible models need to be applied through policy, they also need application in design and supply principles. This means thinking about accountability, rigour, and transparency within your own business and those in your supply chain. For this to be successful, collaboration and partnerships are needed, helping to build truly integrated systems that will, ultimately, reduce impact.



TOO GOOD TO GO X GREENE KING

The partnership with Greene king & Too good to go allows pub managers to gauge during service how many dishes they can sell via the app to reduce waste at the end of service this has proved amazingly successful , next phases we are trailing are selling stock left at menu change cycles as meals as well as short life cask ale “magic pints” hopefully both to be launched early 2022.

04

Democratize responsibility: Make sustainability everyone's business problem

For long-lasting sustainable transformation, the initiative needs to come from the top-down *and* the ground-up. While it's the C-suite that creates road maps, the workforce needs to be galvanised for effective change. This is not a siphoning of responsibility but an establishing of mutual accountability and democratized stewardship.

As ecological justice enters mainstream discourse, once-siloed conversations around offsetting carbon have taken the front seat. Despite this cognitive turn, there's still a need for governments, institutions, and businesses to back the people spearheading change and drive this movement home. Much like innovation is embedded across all aspects of a business, sustainable transformation also needs to be the responsibility of the collective. Across companies, digital tools can democratize power and give all employees the opportunity to make a difference.



“We need to change our mindset and unlearn that bigger and faster is always better. Bold questions should be asked in every meeting and conversation, such as ‘how might we do this?’ and ‘what could the unintended effects of our actions be?’”

Jennifer Crowley,
client partner and sustainability lead at
Kin + Carta

“Every raindrop is responsible for the flood – and every one of us can make a positive difference by looking out for opportunities to use digital technologies to benefit colleagues, communities, and the environment.”

Kesah Trowell,
head of sustainability: Environment Social Governance
The Watches of Switzerland Group plc

04.1

Equip employees and suppliers with the insights and tools to make sustainable decisions



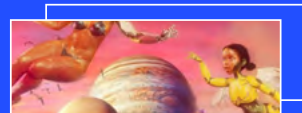
Case Studies

To achieve a livable climate future, 1.5 trillion tons of CO2 need to be removed from the atmosphere.¹⁴ Businesses, their employees, and partners play an important part in achieving this goal. Having the right tools to analyse data and manage usage is the first step. But without employee accountability and buy-in along the supply chain, results will be limited. Whether it's coming from a supercomputer or a smartwatch, all users leave a digital footprint. By empowering employees and motivating suppliers to take responsibility for their output, businesses can democratize sustainability targets.

“There’s a lot of messaging on what you you could be doing, but it isn’t clear on what you *should* be doing”

Yeshna Mistry,
sustainability manager at Channel 4

¹⁴ [Buy Carbon Removals for your Business with Nori by Nori, 2021](#)



REGEN NETWORK

Regen Network is a blockchain technology that tracks, verifies and rewards positive changes to the ecosystem. Using positive environmental impact as an incentive, farmers benefit from direct financial rewards. By gathering data from on the ground or off satellites, status of land health is then uploaded to a communal marketplace. Governments, businesses and institutions can access this information and pay farmers for their positive contributions. A few activities approved by the network include sequestering soil, building soil, cleaning waterways, growing habitat, and healthy food.



NORI

Nori is a platform that allows individuals and businesses to reimburse farmers for offsetting their carbon use. First, farmers remove the carbon. When farmers adopt regenerative practices, they are returning carbon to their soils and keeping it there. Next, carbon removals are quantified and verified by an independent third party before being listed in the marketplace. Individuals can then pay for their carbon footprint through the online platform.



WE ARE ALBERT

Governed by a media industry consortium, Albert supports everyone working in film and TV to understand their opportunities to create positive environmental change. It works across levels, from a Directorate (involving the likes of Channel 4, BBC, ITV, Sky) to a Consortium, where it supports smaller broadcasters and production groups with strategic projects. It also provides free training to anyone working in the screen industry, with modules covering sustainable TV production and editorial creation to spotlighting the planet in broadcasting.

05

Mindful use:

Be intentional and mindful about how and when you use technology

Since the start of the COVID-19 pandemic, 42% of employees globally have reported a decline in mental health.¹⁵ Meanwhile, the World Health Organization estimates that depression, anxiety disorders, and other conditions cost the global economy \$1 trillion per year in lost productivity.¹⁶ The use of technology is unavoidable, but setting boundaries around how and when it is used can help make sure its impact on wellbeing is a positive one.

By helping people make better decisions, optimize behavior, and correct the environments they live and work in, technology can have a positive impact on everyday life. Data can be used to monitor physical and mental wellness, with an abundance of apps built to analyze and advise on health plans.

Yet with all this access to data and technology, there's a need to be mindful of how and when it's deployed. When designing new systems and interfaces, empathy for employees and customers will be key to getting buy-in. It will also set businesses and their products apart from competitors.

¹⁵ <https://hbr.org/2020/08/8-ways-managers-can-support-employees-mental-health>.

¹⁶ <https://www.who.int/news-room/commentaries/detail/mental-health-in-the-workplace>.



“Design – rather than communications – is the key. Create amazing experiences, understand what people need, what they value, and the rest will happen naturally.”

John Grant,
author of Greener Marketing

05.1

Digital therapeutics can help improve physical and mental wellbeing



Prevention and treatment solutions are likely to form the core of employee resilience and mental health programs. They offer various degrees of human touch, from preventive chatbots to in-person psychotherapy. As workforces become more distributed, digital therapeutics can offer support at any time and from anywhere, with the market expected to be worth nearly \$4 billion by 2027.¹⁷ Wearables and digital biomarker apps can be used to collect physiological data and, combined with analytics software, can alert individuals to potential issues, helping them stay healthy.

¹⁷ <https://www.prnewswire.com/news-releases/mental-health-apps-market-accounted-for-us-587-9-mn-in-2018-and-is-expected-to-generate-a-revenue-of-us-3-918-40-mn-by-2027-at-a-growth-rate-of-23-7-from-2019--2027--300997559.html>

Case studies



HINGE HEALTH

As WFH becomes the norm, people are looking for solutions to tackle the toll on their bodies. Hinge Health is a mobile clinic offering digital pain management aimed at those who experience musculoskeletal problems. It provides customizable and personal exercise and health programs.



SOMRYST

Digital therapeutics program Somryst is the first FDA-approved tool of its kind to target chronic insomnia through the use of cognitive behavioural therapy. Feeding back real-time insights to clinicians, the sleep therapy program provides users with training that lasts from six to nine weeks.

05.2

Empathy is a driver of great experience



Case studies

The proliferation of technology across all areas of life is a double-edged sword. As people continue to seek out digital solutions to streamline their lives, service design that demonstrates empathy to the end-user will be a key differentiator. When designing a user experience, people respond better to interfaces that give them agency and options. Services that are adaptable to the needs of the user will be rewarded with customer buy-in.



NSPCC

Working with the National Society for the Prevention of Cruelty to Children (NSPCC), Kin + Carta developed an automated nickname generator to help children access online services anonymously. With 60% of the names previously generated by children looking to use Childline being rejected, leaving many of them feeling confused and reluctant to use the service, this project looked to increase access and safeguard kids' identities online²².

Kin + Carta is a global digital transformation consultancy committed to working alongside our clients to build a world that works better for everyone. As a Certified B Corporation in the United States, and in our offices across Europe, South America, and Singapore, our triple bottom line focus on people, the planet, and profit is at the core of everything we do.

If you'd like to know more about the 5 steps to sustainable digital transformation or find out how Kin + Carta can help you to reach your ESG goals, please get in touch with:

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