DXC TECHNOLOGY

Achieving (truly) sustainable sustainability

April 2022

Thriving in the Accelerated Now

This series explores five factors for business agility:

- Investing wisely in a hybrid technology world
- Mastering platform-driven business
- Boosting data metabolism to improve decision making
- Committing to the human experience
- Achieving (truly) sustainable sustainability

Navigating an intangible, digital, brave new world has become essential and is accelerating. The hallmark of this new world is the circular economy and robust sustainability. Technology plays a key role in enabling organizations to flourish in this economy and meet their ESG commitments.

As we emerge from the pandemic and hurtle into a world that is more digitally connected and faster than ever, it's good to pause and notice just how different everything is. The temptation may be to get on board the post-pandemic business train, accelerate operations, extend ecosystems, and strengthen environmental, social and governance (ESG) practices for good measure. But embarking on a truly sustainable[1] journey calls for old-world views and business ways to be re-minted into fresh perspectives that fit the new paradigm.

Working from home for protracted periods upended supply chains and reshaped personal values, permanently altering the economy, the workplace and society. The concurrent shift toward a circular economy that includes intangible assets (software, data, brands, trust and customer relationships) accelerated during the pandemic and is equally profound and indelible. In COVID-19's wake, hundreds of firms and 130 countries have made commitments to achieving net-zero carbon emissions.

Accelerating to net zero

An overwhelming majority of CEOs (99%) of companies with more than $1 billion in annual revenue say sustainability will be important to the future success of their business, yet there's a danger they underestimate the speed of transition. Disruptive technological progress and policy action are happening in a nonlinear way, and to date, projected reductions in emissions from the use of low-carbon technologies have proven far too conservative. Even the most conservative of the International Energy Agency's scenarios have seen emissions drop by 24% in the last 4 years. An accelerating net-zero transition means companies risk losing revenue and maintaining obsolete business models, creating opportunities for early movers.

Business chiefs must also be prepared to segue from a relentless focus on value to the championing of values. The pandemic ruthlessly exposed company failures to respond to prevailing customer and citizen sentiment. It wasn't just the operationally deficient retailers, who couldn't pivot to meet consumer preferences for omnichannel, that were punished; reputational damage was inflicted on the ethically unprepared. Insurance and travel sectors and sports clubs were among those who made headlines because of how they treated policyholders, customers and service staff, respectively, during the pandemic.

[1] "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." UN World Commission on Environment and Development

Digitizing the circular economy

Navigating this seismic change entails leaving the linear economy of build-sell-use-dispose, getting onboard the circular economy of reuse and recycle, and embracing values over value. This will create tension and force a rebalance in how companies go to market. DXC Technology believes that digitizing the circular economy is the only reliable route to achieve net zero and that mastery of data and platforms enables the necessary play in ecosystems of intangible assets. The good news is that the adaptation began a while back — we're already living and working in the new world.

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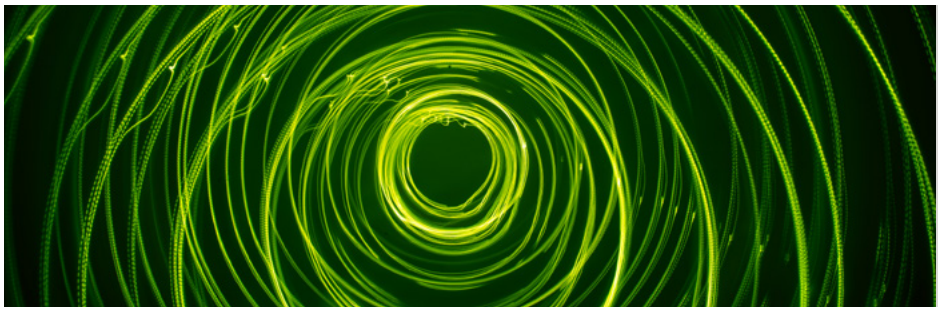
ESG is the vehicle that will drive organizations to achieve (truly) sustainable sustainability, requiring them to oversee a data-driven and platform approach to address near-term challenges of compliance and reporting carbon emissions across supply chains. More challenging will be the job of helping an organization's leadership reimagine and steer their business in the context of the circular paradigm to support ESG goals. Only in this way will organizations make the necessary adjustments to build and navigate new ecosystems, maximizing opportunities responsibly while preparing for future shocks.

If any evidence were needed, the stock market tells the story. Shares in intangible assets — intellectual copyrights, patents and trademarks, including big tech — have outperformed the old industrial shares, a trend hastened by the pandemic. Between 1995 and 2015, the share of intangible asset market value increased from 68% to 84%, analysts Ocean Tomo found. COVID-19 accelerated the trend, with intangible assets now accounting for 90% of the S&P 500 market value.



Going all in on the circular economy

The transition to the circular economy is already underway, driven by growing citizen concerns about climate change and shored up by political support from bodies like the European Union. In a circular economy, renewable, recycled or highly recyclable inputs are used in production processes, enabling partial or total elimination of waste and pollution. In effect, waste becomes an asset, not an expensive liability. It's realistic to presume the circular economy will become the only economy as the 2030s progress.

Arguments in favor of circularity transcend the environmental cause and include societal as well as economic grounds; maintaining social inequalities is increasingly recognized as being as wasteful as dumping material resources. Virtual work is credited with increasing inclusivity and diversity in the workforce. The benefits of an inclusive workforce have been pronounced as "overwhelming" by the World Economic Forum, and a Boston Consulting Group study found that companies with diverse management have innovation revenue that is 19 percentage points higher than those with less diverse management. Inclusive workforces are more qualified, more profitable, more innovative and capture a greater share of consumer markets, according to the Center for American Progress.

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Much like born-digital companies disrupted traditional business models, we'll see born-circular companies disrupting born-linear. In making the switch, linear companies will need to abandon current practices and invest in circular business models. The pandemic proved the case for making adaptations sooner rather than later, as traditional companies couldn't pivot as successfully as born-digital players. When future climate events strike, noncircular companies will similarly struggle. Sweetening the switch, circularity has advantages embedded along manufacturing loops and product life cycles.

Manufacturing becomes cheaper as raw materials don't have to be mined from scarce resources but derive from excess materials and recycled materials. Born-circular products don't have an end-of-life but reach an end-of-current-usage, while their inherent circular design focuses on making value recovery easy and effective. Born-circular companies have a direct economic interest in the extraction of all their products' recoverable value, and the business model ensures that users are incentivized to return the products contractually, through deposits or in the product-as-a-service model.

Collaborative consumption, product-as-a-service and new perspectives

Like intangible assets, which are quietly yet inexorably overtaking tangible assets, many people are already participating in the circular economy without realizing it, perhaps renting clothes or a room in a private home. Tapping into the sharing economy enables collaborative consumption, and the business world is trying its own version with companies choosing to buy products-as-a-service like compressed or clean air, and plant machinery. Circular supply offers a higher utilization percentage of expensive assets — or maximizes idle assets — with the provider incentivized to handle the product's ongoing maintenance, durability, upgrades and treatment at the end of its use.

All these increments of circularity, many of which companies will have dabbled in, need to be supported by a more fundamental switch in perspective by board members, CIOs and ESG committees. In the linear economy, we sell products to the next in line and dispose of them at the end of use; the primary interest is in selling as many new products as possible. Born-circular shifts the focus from volume to performance, maximizing the usage factor and useful life; circular design creates a new model of continuing income streams throughout usage cycles.

The business proposition of circularity is too compelling for any company to ignore: It increases resilience by retaining control of products and materials, thereby saving material costs and protecting against material price shocks, and can hedge against material scarcity issues. The born-circular business benefits from continued customer contact and gains insights into how their products are used. And the born-circular gains access to potential untapped opportunities for businesses, creating, for example, new remanufacturing or refurbishment markets.

An age of intangible assets

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Understanding and measuring intangible assets, their ecosystems and their impacts is critical, as traditional yardsticks of volume and productivity no longer work. We've moved deep into an intangible economy where brands, patents, data and software are driving growth and stock market value. Intangible assets now outweigh tangible assets, in terms of both accumulated capital and investment.

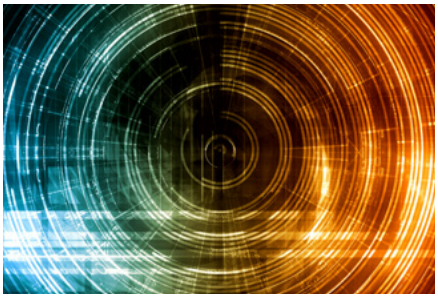
An intangible economy is inherently more sustainable because it doesn't involve the depletion of natural resources — and more circular in that intangible assets do not wear out with use and often increase in value through use. Of course, the intangible economy doesn't replace the physical industrial economy — we're not disembodied beings, after all — but it is increasingly where value is created.

Apple provides the shining example of how intangible value is created: Yes, the iPad and iPhone are manufactured devices, but they are assembled out of commodity components from many of the same manufacturers used by Apple's competitors. The value-add, which enables Apple to charge a premium, comes from Apple's intangible assets: its user experience and design, brand and ecosystem of partners in its platforms, the App Store and Apple Music.

In numerous ways, the new, intangible paradigm is counter-industrial and reverts to models that preceded industrialization, including working patterns. The cottage industry was local and home-based, with family units producing piecework to supplement a livelihood rooted in seasonal agriculture. When industrialization came along, landless workers were corralled into factories with contracts and working hours. The later permutation — the clerical factory, or office — organized knowledge workers and deployed time and motion methods to measure productivity. The rise of the gig economy and, more recently, people at home on Zoom calls during the pandemic revisits the more circular ways of working intrinsic to agrarian times.

The rejection of industrial models and a return to more circular ways is partly a reaction to, and mitigation of, the harmful externalities that industrial models produced. Industrialization with its poor management practices tanked the environment and created harmful workplace practices of controlling workers in the pursuit of productivity, which showed up in behavior like presenteeism. Recent changes in working patterns are being driven in part by a change in values that respect individual workers' desires and circumstances. The intangible economy was seeded in the last century, reached a tipping point in the early 2000s and has been accelerated by the pandemic. In the Accelerated Now of rapid technology adoption, the very structures of industrialization are being unpicked.

Navigating the new terrain



While the old world of business is winding down and the new paradigm unfolds, companies must fathom how to navigate and negotiate an evolving business terrain. Finding new tools for these purposes must be an early task. Whereas the industrial world was driven by quantum physics, measured in volume and productivity and managed using retrospective data, the new world is composed of systems, system dynamics, ecosystems and circularity. Understanding how intangible assets play within these systems calls for a completely different set of tools, and modeling using digital twins is set to play a critical role. Modeling climate scenarios, including the statistical "long tail" occurrences that ripple out from climate events, is a crucial way of looking forward and sideways.

Evaluating how well data platforms support the circular economy and the impact of network effects within different business scenarios is another focus for modeling — as are the knock-on effects of employees working from home and all the other impacts following on from the pandemic or other external shocks. In this landscape, it makes sense to ramp up ESG for a more expansive role that is instrumental in big-picture thinking and measures the quality of ecosystems around brand and other intangible assets.

During this corporate adjustment, the composition and priorities of the board may need to be tuned to reflect the growing role of ESG and the prominence that values play in business propositions. Employee engagement, for example, has featured in corporate vocabulary for a long time, but the contribution of this intangible asset has been surfaced anew by the pandemic. A recent paper found that strong employee satisfaction contributes between 2% and 2.7% to the bottom line and has the greatest value in bad times, yet is still consistently undervalued in stock markets.

The gaze of ESG may also need to extend to the implications of the lack of shared space in public discourse, caused by people communicating exclusively within social media bubbles. Ramifications of the resulting polarization are felt now within companies and could leak into customer ecosystems, triggered by unknown future events. As new negative externalities become apparent, leaders will need to test the organization's optimal position: whether a "do no harm" stance will be sufficient to protect a company's intangible assets in the longer term.

Data-driven ESG

Another piece of ESG-led fine tuning that lies ahead is to strengthen leadership capability in the realm of data and IT to support an optimal play in ecosystems of intangible assets. Already boards within the banking sector are being scrutinized to see how executives' depth and breadth of experience stand up to digital transformation efforts. The role that IT and data currently perform in helping organizations meet their net-zero ambitions by monitoring carbon mitigation obligations is bringing boards up to speed with their digital capabilities — and deficits.

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ESG in the post-pandemic world is a strategic and data-driven item on the boardroom agenda and is the natural domain of CIOs. They'll help drive sustainability into a business by shifting to software-defined assets that can be tested virtually, avoiding or mitigating product development emissions. Once exclusively the realm of auditors checking for regulatory compliance, sustainability is as likely to be a discussion about the cyber–physical fabric driving digital economies of scale and scope. CIOs can take the lead by ensuring IT itself is not causing issues; improving data quality, accessibility and traceability; and being innovative with IT.

Compliance with environmental regulations is a useful exercise in highlighting the need for clean and connected data. Tackling Scope 3 carbon emissions (indirect emissions from customers and suppliers in a company's value chain) presents an additional layer of complexity, including abandoning opaque carbon accounting and tracking practices, and working collaboratively with customers, supply networks and industry groups. Opaqueness undermines trust and opens up accusations of greenwashing. A comparable lack of transparency is similarly found in data on social and governance activities around gender and pay equality.

The good news is that a trio of emerging technologies promises to overcome the limitations of current ESG data by providing direct, as opposed to indirect, data. (See "Emerging technologies" on next page.)

Technology spotlight: Tech to lead the ESG approach

Carl Kinson, Director, Technology Center of Excellence, DXC Technology

Some key technologies in the battle to improve ESG conditions are highlighted below according to three stages of technology evolution: emerging, experimental and established.

Emerging technologies

Distributed ledger technology (DLT), geospatial technology and internet of things (IoT) provide immutable records and the digital verification of physical environments and objects that strengthen trust. Such technologies provide traceability of products and materials, enforcing labor standards and protecting natural resources. Additionally, ESG will be served by efforts to improve data metabolism — optimizing flows of data around organizations and ecosystems in order to enhance decision making.

With the enterprise digitizing in tandem with adapting to environmental concerns, sustainable technology methodologies, dubbed EnvOps, will increasingly be adopted, allowing the organization to digitize sustainably. EnvOps will have a data metabolism, capturing ESG data, tagging it according to the technologies in use and calculating the impact of the enterprise estate in real time. The senior leadership team will have access to this data via dashboards to help them meet ESG key performance indicators and make informed sustainability decisions.

Experimental technologies

The sustainability cousin to privacy by design and security by design, sustainability by design will see wasteful technological processes made redundant. Organizations will increasingly understand and demand that systems have efficient code that does not waste CPU usage, and that the entire technology architecture of the enterprise reduces the impact of the business on the planet.

Established technologies

The distributed enterprise can play a key role in reducing an organization's environmental impact, as employees flex their travel times to be more environmentally sustainable. A remote workforce will not require energy-hungry office facilities; however, organizations will need to use EnvOps, as detailed above, to ensure that increased use of home offices, data centers and 5G do not simply shift the carbon footprint to the employee. In addition, the human experience and well-being are significant considerations in the distributed enterprise. Though the distributed enterprise is not new, research into the human experience is, and will continue to accelerate.

Sustaining sustainability

Efforts to clean up the negative effects of the industrial age are in motion. In the new circular paradigm, ESG shines a light on an evolving business terrain that's subject to rapidly changing forces. The goal is to keep employees, society and the planet safe.

Data and modeling will play crucial roles in understanding the circular economy, understanding how intangible assets are valued and play in ecosystems, and preparing organizations for system change caused by external shocks. It will be a human endeavor shared with employees, investors and shareholders who are mindful at every level of their organization's impacts on society and the planet.

About the author

David Reid is responsible for the research team's research, strategic thought leadership and advisory agenda at DXC Technology. Dave has significant experience in helping business and technology executives shape their plans to exploit the opportunities offered in the digital world. Alongside his general leadership role, Dave has driven research into business and digital transformations with C-level leaders and is heavily involved in the delivery of advisory work. He serves as a trusted advisor to many of DXC's customers. Follow Dave on LinkedIn and Twitter.

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