Embracing Regenerative Economics for a Sustainable Future

By David Kish, Danielle Stanko and Preeti Gandhi

Abstract

At TCS, we have always believed that business exists to serve community. That belief has guided our commitment to create a positive impact on the world we live in and continually respond to the changing needs of the communities we serve. Today, the world faces many new challenges that will shape the way we live, and none is more urgent than the one that threatens the very future of our species.

As often happens, the solutions that solved the problems of yesterday create the problems of tomorrow. And so it has been with humanity's quest to provide for the needs of our growing population. Technology and innovation have allowed us to make enormous advances in human wellbeing over the past two centuries. At the same time, the industrial systems we have created to provide for the needs of nearly 8 billion people have not been good at making things accessible to everyone, and they have created rapidly escalating pressure on our planet's ability to provide us with resources and process our waste.

In this paper, we outline the gravity of the situation we find ourselves in and offer our perspective on a path forward. While the path will not be easy, we believe in the power of the human spirit to draw upon our creativity to evolve in ways that balance our relationship with the Earth, each other, and technology. At TCS, we feel responsible to every life we touch as stewards of this tiny planet we hold so dear. For us, the only future is a sustainable future.

The magnitude of the challenge

In 1972, an MIT study, which was the basis for the best-selling book "Limits to Growth", predicted that society could collapse as early as 2040 from social and environmental degradation caused by a continuous pursuit of economic growth. Recently, Gaya Herrington, Sustainability and Dynamic System Analysis Lead at KPMG,[1] updated the report with current data that reinforces its original conclusion.
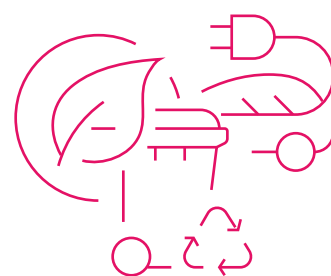
[1]   Update to limits to growth: Comparing the World3 model with empirical data

Using variables such as population, food per capita, non-renewable resources, and others, Herrington highlighted three possible future scenarios: Business as Usual v2 (BAU2), Comprehensive Technology (CT), and a Stabilized World (SW). Only the SW scenario mitigates the worst consequences by combining technological innovation with investment in public health and education, as well as changes to behavior and consumption. That said, the first two scenarios were the ones that tracked most closely with current data.

This study is just one of many indicators of our rapidly escalating social and environmental crises. Without urgent systemic change, we are likely headed toward widespread suffering.

Herrington concluded,

"Both BAU2 and CT indicate that continuing business as usual, i.e., pursuing continuous growth, is not possible. Trying to do so would inevitably lead to declines in industrial capital, agricultural output, and welfare levels within this century."[2]
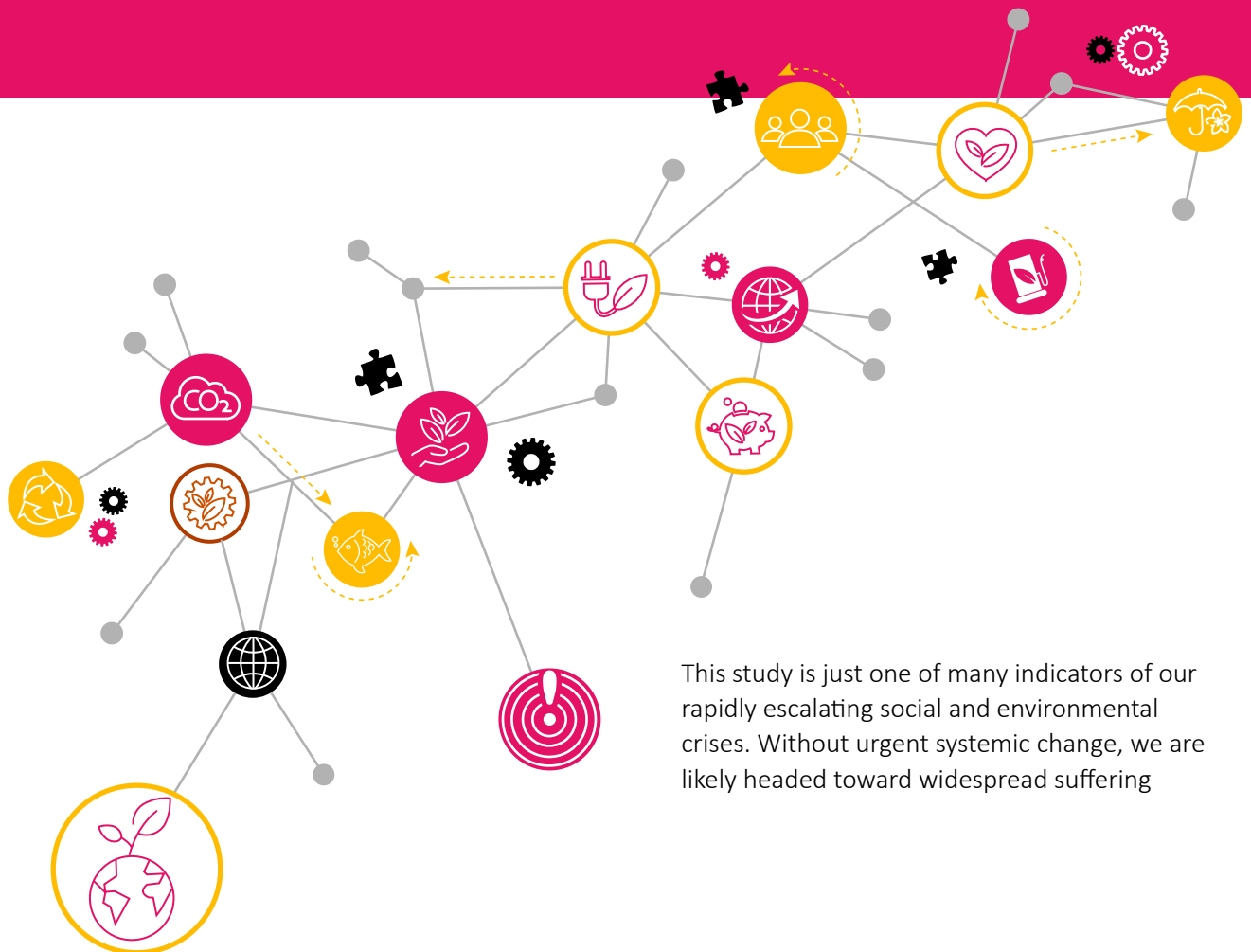
This study is just one of many indicators of our rapidly escalating social and environmental crises. Without urgent systemic change, we are likely headed toward widespread suffering

[2]   https://en.wikipedia.org/wiki/History_of_sustainability

A systemic change: From sustainability to regenerative economies

Since the late 20th century, sustainability has become increasingly important for business[3] as governments and individuals call for practices that limit greenhouse gas emissions, treat people fairly, and reduce waste.

Hence, mitigating the adverse effects of climate change, upholding ethics, fostering diversity, and creating circular economies are top priorities for many Corporate Social Responsibility (CSR) programs[4]. Yet despite 90% of S&P 500 companies undertaking CSR work[5], the most recent Limits to Growth[6] data demonstrates that these efforts have not been enough. This is because our current social and economic systems, which were designed to improve individual lives, often lock us into unsustainable practices that ignore the collective impact of externalities created by industrial scale systems.

[3] https://en.wikipedia.org/wiki/History_of_sustainability
[4] https://globescan.com/wp-content/uploads/2019/11/BSR-GlobeScan-State-of-Sustainable-BusinessSurvey-FinalReport-12Nov2019.pdf
[5] https://online.hbs.edu/blog/post/corporate-social-responsibility-statistics
[6] https://www.linkedin.com/pulse/i-did-data-check-world-model-forecast-global-collapse-branderhorst/

To achieve a stable world, we need an entirely new paradigm for the way we think about social and economic development—one that takes a whole systems perspective on relationships in a complex and interdependent world. We need an approach that balances our relationships to each other, the Earth's life-supporting systems, and the technology that underpins our lives. We must go beyond sustainable development—doing less harm to our environments—and start repairing these relationships so that everyone now and in the future can thrive. We need new systems and models that generate many types of wealth and create collective longevity.

Regenerative economics is a way of thinking oriented around cultivating and revitalizing wellbeing at all scales, from individuals to landscapes. It starts with the belief that people are participants within Earth's unpredictable, dynamic systems, where the best course of action is to build resiliency while staying attuned and adaptive.

Regenerative economics is founded on a set of principles from The Capital Institute[7], a leading think tank dedicated to reimagining our economic and financial systems. These principles emphasize the following:

Raising awareness of our interdependencies

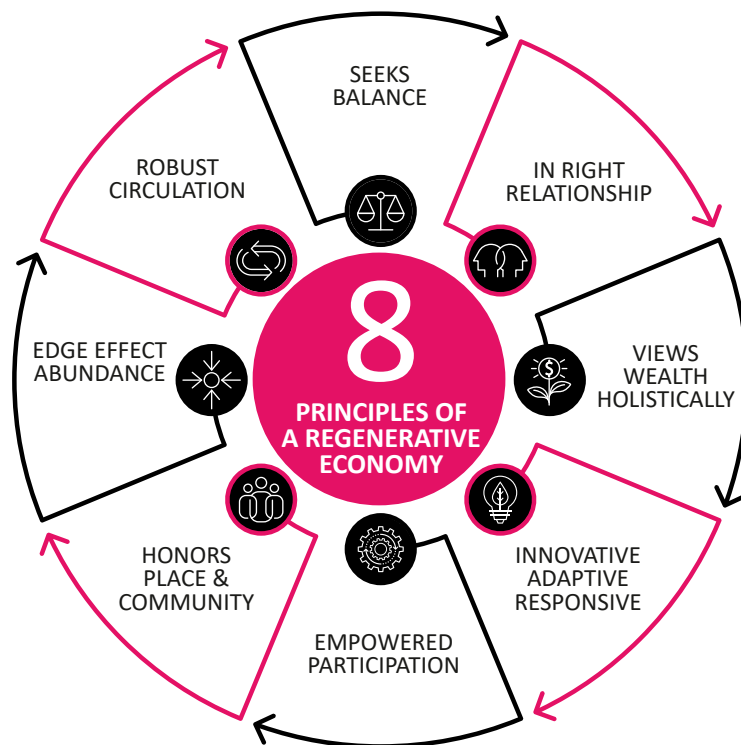| Raising awareness of our interdependencies | Viewing wealth as more than money | Responding to complexity through adaptive innovation, empowering people | Emphasizing the importance of local economies | Magnifying the effect of collaboration across boundaries while recirculating resources within boundaries | Balancing efficiency with diversity |

Figure 1: An overview of TCS' Connected Devices Management Platform

[7] https://capitalinstitute.org/8-principles-regenerative-economy/

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Levers of action: Applying the principles of regenerative economics

Our levers of action are based on observations of emerging trends that are already working. They represent areas of investment and experimentation that move us in the right direction while allowing us to learn more. The levers have the most impact when combined but are mutually supportive if done separately and learning is shared

- Lever 1 applies regenerative principles to emerging platform ecosystem models.
- Lever 2 focuses on how ecosystems can enable sustainable choices.
- Lever 3 calls for a regenerative approach to innovation that solves our hardest sustainability challenges while keeping us adaptable to future needs.
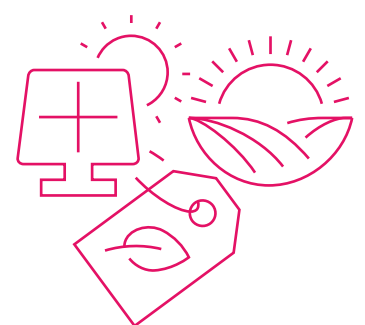
Developing regenerative platform models that power a sustainable future

As the world becomes hyper-connected by ubiquitous technology, platform ecosystems are becoming the dominant engine for economic growth. And while platforms can reorganize markets in complex ways that drive unprecedented levels of efficiency, they also make our world more vulnerable to the catastrophic failures that are inherent in complex systems. Platforms can also exacerbate sustainability challenges by concentrating power and value among a small number of participants, amplifying practices that are unsustainable. The ability of platforms and ecosystems to stimulate collective action around shared goals is compelling and essential for sustainability. Hence, we believe platform ecosystems can be an incredibly powerful means to create a sustainable future if they are structured and governed in ways that are regenerative.

So, what makes a platform ecosystem regenerative? Regenerative platform ecosystems differ from traditional platform ecosystems because they arise from common purposes that attract communities. Their value is determined more by how vibrant their communities are than from the economic capital and efficiencies of their marketplaces. They are self-governed rather than centrally controlled, as their communities guide their direction using prosocial methods and decentralized technologies. They also emerge in local rather than purely global contexts. That is, they emphasize local, distributed production of globally shared designs and knowledge, locate resources from within the immediate landscape, and manage global systemic risk by encouraging risk-taking and experimentation at the local level.

Key actions:

- Define a business purpose in terms of sustainable/regenerative goals.

- Empower people to act on the purpose through social entrepreneurial ventures.

- Engage in sense-making to participate in emerging practices and continuously adapt.

- Establish common knowledge, designs, standards, and communication systems that help ventures build off of one another's experiences.

- Create new or align existing processes to support small autonomous entrepreneurial teams.

- Adopt self-governance approaches (e.g., sociocracy, holacracy, prosocial) and train people in multi-entity collaboration.

- Ensure your business model contributes to individual and collective health.

- Experiment with and adopt decision-making based on multiple types of wealth (social, natural, economic). Observe how decisions change if you optimize multiple types of wealth versus economic wealth.

Key questions:

- What is the greatest good your organization could aspire to?

- How would becoming a regenerative platform ecosystem help your organization achieve its greatest potential?

- Where might you experiment with self-organization to test cultural viability and minimize risk?

- What themes could form the basis for micro-communities to emerge?

- Do you operate any platforms today that could be made regenerative?

- Rather than a set strategy, could you define constraints or guardrails to allow the network to evolve itself within safe limits?

Creating collaborative ecosystems that enable sustainable living
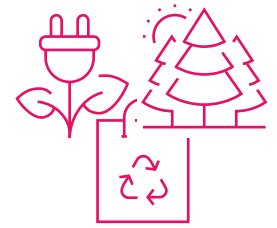
In addition to platform models that adhere to regenerative principles, ecosystems are needed to improve collaboration on sustainability challenges that cut across traditional industry and sector boundaries. The illustration depicts nine purpose-driven, highly cooperative, and equitable ecosystems that we believe can emerge if enabled by regenerative platforms. The ecosystems are divided between those that provide essential services (Sustaining ecosystems) and those that guide various aspects of our lives (Life Experience ecosystems.

Sustaining ecosystems provide resources like food and water, our built environment, the ability to move about, our legal and financial systems, and the things we make to improve lives. Life Experience ecosystems enable various aspects of our lives such as fitness and health, recreation, entertainment, news, local activities, and social media. They encompass countless daily decisions that represent how each individual chooses to live and they collectively determine how sustainable our world can be.

But life experience ecosystems cannot enable sustainable choices without sustaining ecosystems.

Elements of sustaining ecosystems get embedded within the life experience ecosystems. For example, a vacation experience, which is part of the leisure ecosystem, depends on how sustainable the embedded transportation (Mobility), housing (Spaces), food (Resources) and product (Maker) elements of the experience are
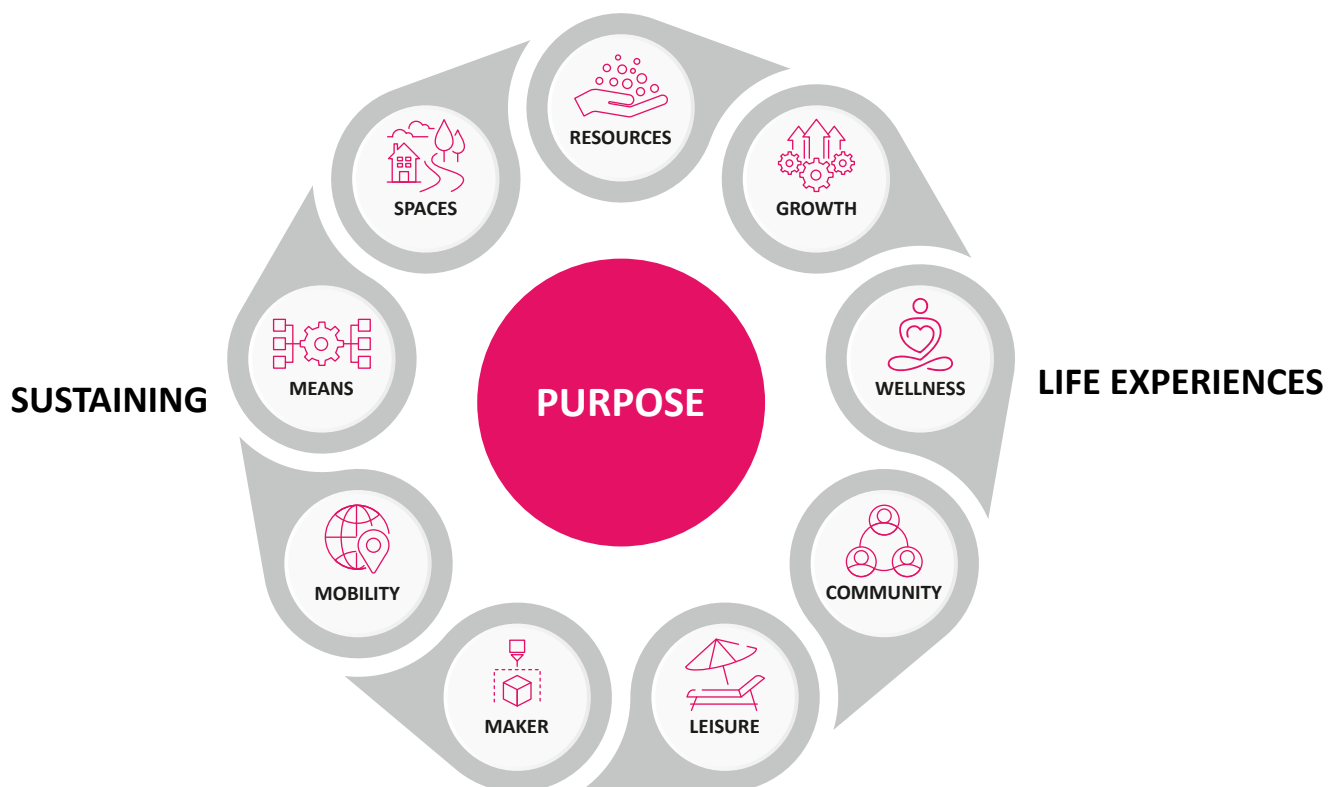

Figure 2: Sustaining and Life Experience ecosystems comprise nine emerging ecosystems.

Key actions:

- Understand which emerging ecosystems are relevant for you and where you contribute.

- Let the edges of your network guide how ecosystems should emerge.

- Understand the role your infrastructure plays in achieving a broader goal.

- Support the emergence of sustaining ecosystems by demonstrating the demand for it.

- Seek to create experiences from existing sustainable infrastructure.

- Embed sustainable attributes into multi-party experiences (sharing, local, connections, transparency, fairness, ecological impact).

Key questions:

- Which sustainability challenges most need an ecosystem to address?

- If your business aligns primarily with a sustaining ecosystem, how sustainable are your operations, products, and supply chains?

- What experiences do you create or contribute to? How sustainable are they?

- Which life experiences does your business participate in or support? How?

- What external products/services support the life experiences that your business participates in?

- What resources and social systems are material to your business that could be better co-governed in an ecosystem with others?

- What impact is your technology accelerating?

- How might business use products and services to make sustainable consumption the easiest option for people?

Lever 3:

# Harnessing regenerative innovation to accelerate solutions to our most urgent challenges
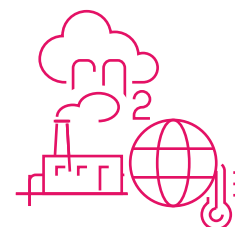
Humanity's needs have historically driven our innovation priorities and the way we innovate. As our population has grown, we needed to provide for such things as food, water, energy, and transportation at scale. Those individual subsistence needs greatly influenced the emergence of innovation as a means to competition. That competitive spirit led to the creation of our current industries and gave us the global industrial systems that have greatly improved human subsistence. Because this approach to innovation largely ignored its environmental impact and wealthconcentrating effects, this innovation paradigm was destined to become unsustainable. Our current social and ecological challenges, which are collective in nature, are driving the need for a new way of innovating that's more environmentally aware, cooperative, and accessible to everyone.

And yet, the competitive approach to innovation is driving an emerging narrative within business that views sustainability as the latest means to sustaining a competitive advantage[8]. But we cannot compete our way to a sustainable future—this approach duplicates efforts and moves too slowly to address the urgency of our crises. While every business needs to rethink its purpose and create value in sustainable ways, we believe it is important to transcend competition and break free from traditional thinking when it comes to our shared, existential crises. Because our collective challenges are urgent (the window of time for us to select a stable future is closing), innovation, which represents, which represents our core ability to adapt, needs to adapt in ways that are regenerative. Regenerative innovation moves with speed by empowering as many people as possible to participate

[8]   https://www.bcg.com/publications/2020/quest-sustainable-business-model-innovation

and share open solutions. Here, platform ecosystems as a model can help innovators collectively organize, learn, experiment, and amplify impact. This approach to innovation is not new. It starts with an open innovation community that establishes shared, global standards. The global standards can then be freely used, modified, and implemented by anybody. Naturally, the standards kickstart a new market of goods and services following the guidelines. One of the primary pioneers of such an open innovation model is the Open Compute Project. It created the most efficient and interoperable data center infrastructure available. The collaboration of over 250 organizations[9] resulted in a marketplace for hardware and services that now generates $3.6 billion in revenue[10]. More recently, Gaia-X has been established as a cross-sector community to create the international data infrastructure for Europe. There is no similarly large or active open innovation project creating sustainable infrastructure. It would require global sharing of sustainability knowledge for urgent, interconnected, and challenging problems. At the same time, the local part of the model would need unique experimentation and implementation to feed lessons learned back into the global innovation community.
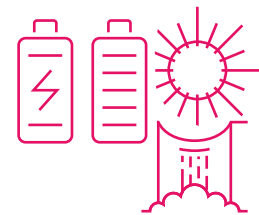
Widespread regenerative innovation on urgent challenges

With a model for regenerative innovation, we can focus on the most urgent challenges. Although sustainability is rising among corporate priorities, including stakeholder capitalism[11], the triple bottom line[12], and purpose-driven business[13] movements, we still need considerable effort to mitigate existing risks of ecological and societal collapse. We are currently overshooting ecological thresholds while still falling short of meeting everyone's basic needs.

Based on the thresholds we already crossed and the worst unmet social foundations, our most urgent innovation imperatives are to:

- Reduce biodiversity loss. It is caused by many things, like habitat destruction, over-exploitation, pollution, and climate change[14].
- Achieve net negative greenhouse gas emissions until we return to safe atmospheric concentrations. This will relieve pressure on biodiversity and major risks to those in poverty who are hit hardest by climate disasters.
- Improve stewardship of land, while repairing and reconnecting landscapes. This supports biodiversity, reduces reliance on synthetic nitrogen and phosphorus, better nourishes people, and turns land into a greenhouse gas sponge.

- Design for circularity and safe 'pollution'. Circular manufacturing preserves resources and energy. It reduces consumption, redesigning goods to contain easily recyclable, non-toxic, and biodegradable materials, reusing what has already been created and recycling to recover resources and energy.
- Make data more transparent and democratize ownership. Being transparent and giving people a right to own their data is important for improved peace and justice as well as income and work.

Based on our current data, regenerative innovation would suggest immediate, prioritized action on the solutions above. In some cases, this means focusing on implementation while others still require technological breakthroughs. For example, we already have the technical solutions for climate change. Project Drawdown found that we could reach negative greenhouse gas emissions by midcentury if we implement existing climate solutions.[15] In most cases, economic, political, social, and systemic barriers have kept us from implementing those solutions. It is important that we creatively innovate new business models, marketing tactics, funding mechanisms, and scaling strategies as stop-gap measures to our current trajectory.

[9]   https://www.opencompute.org/membership/membership-organizational-directory
[10]   https://www.opencompute.org/about/ocp-adoption
[11]   https://www.weforum.org/agenda/2021/01/klaus-schwab-on-what-is-stakeholder-capitalism-history-relevance/
[12]   https://en.wikipedia.org/wiki/Triple_bottom_line
[13]   https://www.forbes.com/sites/afdhelaziz/2020/03/07/the-power-of-purpose-the-business-case-for-purpose-all-the-data-you-werelooking-for-pt-1/?sh=71d1ad2a30ba
[14]   https://www.britannica.com/study/learn-about-the-causes-of-biodiversity-loss
[15]   https://drawdown.org/solutions

Key actions:

- Establish sustainable innovation as a top priority.

- Contribute to open innovation projects within or across industries.

- Empower employees to be sustainable innovators.

- Optimize impact by prioritizing innovation investments across sustainable operations, products, supply chains, and open challenges.

Key questions:

- Do you view sustainability as a social responsibility or competitive differentiator?

- How do our existential crises and unmet social needs impact your business and inform your priorities?

- With whom does it make the most sense to collaborate with on sustainable innovation?

- To what extent should sustainability intellectual property be open source?

- What criteria would determine if sustainability intellectual property should be open?

- How can existing solutions be leveraged/scaled to solve problems faster?

A better way

We face existential challenges that must be approached with urgency, collaboration, and the need to fundamentally repair our relationships—with each other, the Earth, and the technology we use. The path forward requires fundamentally rethinking our economic and business models, harnessing our creative abilities, and better appreciating the resiliency of decentralization.

Regenerative economics is not at odds with the present capitalist economic framework. Rather, it offers a new way forward to show how technology and business can be a force for systemic change. It is also a call to action for collective innovation to solve our most urgent sustainability challenges and a necessary corrective to the way we define value, the purpose of business, and the way we structure and govern collective action.

TCS was created around the idea of helping communities, both locally and worldwide. We see the value in a healthy, engaged workforce. We learn from and share learning with our collaborative crossindustry partnerships. Our experience with our innovation networks has exemplified how technology and business can be a force for systemic change.

As Herrington noted when studying the data, there is only one realistic scenario that moves us forward in a sustainable manner and that's captured in three levers of action: regenerative platforms, ecosystems that enable sustainable living, and a regenerative innovation approach that not only solves our most immediate challenges, but allows us to monitor the effects of innovation, share those observations with the global community, and reflect on how the innovation process can adapt in order to stay resilient in the face of changing circumstances.
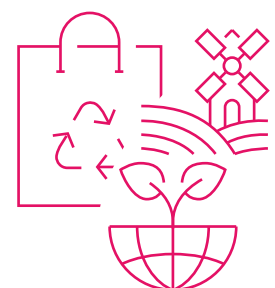
About the authors

David Kish is an Ecosystem Advisor, consulting on the future of business & society. He focuses on the transition of industries into platform ecosystems and the emergence of cooperative models that create resilient, regenerative economies. He works with anyone interested in collaborating across the public, private and social spheres to design experiences that enable everyone to thrive.

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Danielle Stanko Danielle Stanko is passionate about regeneration and believes that economics and organizational models are critical to design for a better future. She has expertise in platform models, has consulted on blockchain and innovation and is always looking for opportunities to better align business with people and planet.

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Preeti Gandhi is passionate about sustainable development and believes only purposeful organizations can thrive in the longer term. She focuses on sustainability strategy development, including environmental management, diversity, equity and inclusion, and has worked in social impact innovation and blockchain-led sustainable development use-cases. She thrives on collaborating with individuals that want to marry purpose and profits, and positively impact billions of lives.

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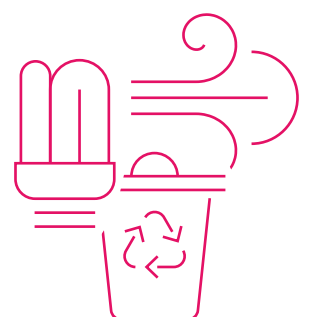
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