Transform

Towards a Sustainable Business Blueprint:

Balancing Environment, Social and
Governance to deliver
Net Positive Digital Services

Claire Robinson
Director of Sustainable Business Consulting

With headlines like 'if tech was a country, it would be the <u>3rd largest carbon emitter</u>', and 'tech has a <u>bigger impact</u> than commercial aviation', the sector is finally starting to awaken to its increasing environmental impact, and the huge potential for technology to significantly reduce global emissions.

Our industry's relentless focus on the user and their needs has meant we've ignored some of the planet's needs, and the broader human consequences of designing a world where we can have plastic-wrapped goodies delivered to our door in under an hour. It's now clear we need to balance the needs of both people and planet, while ensuring long term prosperity for businesses.

So how can we do that? This is a complex systems problem in need of a complex and holistic systems solution. There are two paths to avoid when tackling this knotty problem:

1 AVOID: Purely focussing on measurement

As environmental regulations tighten, many organisations have focussed their sustainability efforts on aligning ESG measurements, getting metrics-led accreditations, investing in accountancy skills to enable reporting, leaving a huge gap in the innovation and delivery space.

Most large businesses have set Net Zero targets, but many are struggling to deliver significant carbon reductions. As the extent of emissions from technology is understood, so is the potential to reduce footprint through digital estate and operations.

It's clear we need solutions - we need to start designing products and services with sustainability in mind. Organisations need to innovate, act, deliver AND measure to reduce the gap between promise and delivery. And they need to do this simultaneously - it's a case of Everything, Everywhere, All at Once.

2 AVOID: Purely focussing on Net Zero

If our only goal is to reduce carbon emissions and deliver Net Zero, we risk creating other negative environmental externalities such as excessive water consumption, or biodiversity loss.

If we focus only on environmental outcomes, we risk perpetuating inequalities in our society – we could achieve planetary goals, but still be supporting child labour in mining the raw earth materials for our devices or failing to deliver equal opportunities closer to home.

We can do better than this. We can consider the fuller picture and design out some of these negative and unintended consequences. That's why it's important to balance environmental goals with societal and governance goals - the E, the S and the G. It's clear we need to design solutions for a wider system.

That's why we're focussing on the UN's Sustainable Development Goals and supporting clients in identifying which ones their products and services are materially affecting.

Transform

We've pledged to build Net Positive services for citizens - supporting our clients to create positive outcomes across the relevant Sustainable Development Goals

So how do we approach designing new, environmentally friendly and fairer services for all?

Towards a sustainability blueprint: a balanced systems-led approach

As the inimitable Natalie Bennett said at this year's Earthfest: "History is made by the actions of people" - and seemingly small actions, if taken collectively, can lead to tipping points and real change.

We've designed an 8 Module Approach to guide sustainable transformation - whatever your role, there will be strategies, actions or jumping off points here that you can adopt or drive in your business.

Module	Description
1. Set a Transformative Vision & Purpose	A citizen-centric vision for the future aligned to the Sustainable Development Goals. A Purpose going beyond 'doing no harm', to incorporate active delivery of measurable benefit for People, Planet + Prosperity
2. Incorporate Broad, Inclusive Stakeholders	A broad, inclusive approach to stakeholders, incorporating future, invisible and non-human personas in addition to traditional user personas, plus indirect + community stakeholder involvement to co-design solutions
3 'Big Picture' System Mapping + Connections	Map the social, environmental + policy systems the service/product/experience sits within, highlighting broad planetary + social impacts, revealing positive policy interventions and circular partnership opportunities
4. Future Human-Centred Design	Inclusive, sustainable design techniques to create lighterweight experiences, minimising waste, enabling access - consciously examining practitioner bias, creating nudges to encourage sustainable, inclusive citizen behaviours
5. Responsible Technology Delivery	An elegant, minified approach to code, technical build and operations, incorporating green software techniques, limiting carbon intensity of code, data transfer and hosting solutions. Working with providers to push boundaries
6. Measure Impact + Balance Outcomes	Continuous, iterative experimentation-led measurement and optimisation practice to ensure negative impact is reduced + benefits maximised. Designing in activities to mitigate, reduce or offset negative consequences
7. Future Scenario Mapping + Planning	A continuous mapping of future scenarios to identify and avoid/ mitigate unintended planetary, people or prosperity consequences, adapting business and services to changing needs of people, new risk contexts
8. Mobilise a Movement: Transformative Change	Supporting organisations to incorporate lasting change, with a focus on people, mindsets + accountability, delivered through operating + organisational model shift, employee experiences, skills transfer & capability build

Transform

1. Have you set a Transformative purpose?

One of the biggest reasons younger generations feel the future is bleak, is because there's no clear positive vision for the future to step into. But it's our role as strategists, designers, researchers, business owners, product managers, teachers and parents to define this collective vision and establish the pathways for people to tread.

(If you want a double dose of inspiration and hope, I cannot recommend Jon Alexander's book Citizens highly enough)

All the negative consequences we need to redress stemmed from human ideas, so we can use this same creative force in a positive direction. We can create the future we want.

So be ambitious, set a vision and purpose, describe the world you're creating and outline the SDGs your service is designed to make a dent in. Give employees and colleagues something to rally around and be inspired by. I love using the Flourishing Business Model Canvas to guide this big, broad, bold thinking.

2. Is your approach to stakeholder research broad and inclusive enough?

Look beyond the users of a product or service to the people impacted by it - consider the 'invisible personas'. Are there unintended consequences affecting a particular community? Can you find ways to include their views in research?

Consider using non-human personas like "the environment" or "bees" or "river" - this can present opportunities to preserve biodiversity and give a completely different perspective on the brief. For example, Apple's now famous incorporation of Mother Nature as a board member helps guide decision making at the top.

Can you include broader stakeholders into co-design activities - finding ways to involve activists, regulators, detractors, lawmakers in your workshops or decision making? Representing a broader range of views will help future-guard your solutions and open up new communication channels to make services more robust in the future.

3. Have you mapped the 'Big Picture' systems your product/service operates within?

From environmental to social and governance factors, your service will sit within a larger system. Think about extending a customer journey/user map: what do users do before and after interacting with you? What are the raw materials that go into your service? What is wasted coming out?

Setting broader boundaries on your system map will often create opportunities to partner with adjacent entities or highlight opportunities to reduce waste and incorporate circular thinking. Identifying these opportunities often lead to business benefits – creating income from waste or new revenue streams through partnerships.

Donella Meadows is a great place to start learning more about systems thinking, but there are also some excellent resources on the Ellen Macarthur foundation website, particularly on the topic of circularity.

It's our role as strategists, designers, researchers, business owners, product managers, teachers and parents to define this collective vision and establish pathways for people to tread.

Transform

4. Have you considered future humans in your design decisions?

Design is a powerful tool to help people make the right choices – embedding nudges towards more positive behaviours within services is a clear way we can support social and environmental goals (consider walking to your appointment, consider before downloading this file, consider reading text instead of video), or services designed to help healthy choices stick (see Transform's work for Public Health England as a great example here).

Making more energy efficient choices throughout the design process – lighter weight patterns, content, fonts, colours – can all make a big difference, particularly if the service is used by lots of people. The great news is, environmentally friendly choices are often aligned with accessibility needs and make websites more efficient and secure, decreasing hosting cost and supporting users reach their goals more quickly. It's a win, win, win for people, planet and prosperity.

Some brilliant resources, particularly design principles, are coming from the Planet Centred Design teams within government on this topic, and at Transform, we're working with W3C's Draft Web Sustainability Guidelines, alongside Accessibility and Inclusivity guidelines and principles to inform and balance our design choices throughout client projects. Keep your eyes peeled for further content in this series by Transform's excellent Research & Design Team!

It's extremely important to be conscious of practitioner bias – designers can ensure greater inclusivity by incorporating regular activities to mitigate this. (Props here to Damien Lutz with his Life Centred Design tour de force – an excellent book with lots of useful resources, particularly to help designers step outside the mindset and assumptions of dominant culture when designing products and services)

Environmentally friendly choices are often aligned with accessibility needs and make websites more efficient

Transform

5. Are you taking a responsible approach to development and operations?

Technical choices also make a significant impact on the carbon consumption of digital services. Creating elegant, minified code is great sustainable practice, and delivers security, cost and efficiency benefits too.

Incorporating a less dynamic approach to serving content (where appropriate) can also make services run more efficiently. Technologists can consider Jamstack which utilises caching to decrease calls on databases, saving users time and the planet carbon, and amounting in a fair chunk of savings if the service is used by many people.

Weaving W3C's Web Sustainability Guidelines and SustainableIT.org's standards into process is a challenge on the organisational to-do list, but it's important to identify the potential cost savings of embedding Green Ops to ensure this is adopted more broadly as business practice.

Savings can be delivered by efficient hosting – as a general rule, using cloud providers is more carbon efficient due to the scale of their operations and sustainability best practice via their Well Architected Patterns (AWS Sustainability Pillar and Azure Sustainability workload documentation).

However, during cloud migrations, be wary of simply 'lifting and shifting' old or inefficient code or processes to the cloud, as the biggest carbon use is often the data transfer to do that. And once it's in the cloud, it will stay there.

Be cloud conscious up front by reviewing and reducing complexity first – are some processes no longer needed? Are some pages or sites out of date? Are defaults for saving files or content set for too long? Have you considered cold storage for items that won't be needed regularly? All of these considerations can reduce hosting fees as well as carbon emissions.

Resources from the Green Software Foundation, including the software practitioner course, is an excellent place to start your journey towards building responsible software, and a shoutout here to the brilliant authors of the recently released Building Green Software – Anne Currie will be joining us to dig deeper into the potential of 'Retrofitting' digital services for sustainability – a Tech UK event in this content series.

Creating elegant, minified code is great sustainable practice, and delivers security, cost and efficiency benefits too.

Transform

6. Are you measuring impacts, experimenting with positive interventions and balancing negative outcomes?

Measuring the impacts of technology decisions at each stage of the decision process is a tricky business.

Thanks to increasing granularity of hosting data from Google (gold star), Microsoft (some great insights) and Amazon (could do better), we can see the environmental impact of the data centres hosting our services and optimise this by time and location to focus compute when and where the grid is greenest.

But this is just a small part of the story - the embedded carbon in devices is often the lion's share (80%) of tech emissions, which occur before software is developed. A great resource to understand this is Gerry McGovern's book World Wide Waste, and a simple framework to begin mapping impacts is Scott Logic's Technology Carbon Standard model .

However, this is just the carbon picture - there are many more impacts that we'll need to measure to avoid negative externalities - water usage, raw materials usage, designing out waste.

This can feel like a leap into the unknown. But a necessary one. There are lots of impacts which aren't currently measurable, and there are no hard-and-fast rules about what works and what doesn't. As metrics become available and more standardised, we can weave them into our process.

As consensus forms, like Green Software Foundation's SCI formula (Software Carbon Intensity - recently recognised as an ISO standard), we can incorporate those metrics into our 'how', creating rapid experiments to test whether our decisions are having a net positive effect.

Once we understand the impact, how can we balance negative consequences? 'Offsetting' has become a dirty word in sustainability circles, and rightly so - simply paying other entities to deliver positive actions (which are very unclear whether they create any additional benefit) doesn't truly deliver net positivity.

But once you understand the impacts - carbon or otherwise - of your digital service, it's possible to design positive actions into the experience (e.g. supermarkets publishing relevant recipes to reduce food waste, printers funding tree planting and carbon sequestration) to negate some of the negative effects more directly.

Technology Carbon Standard

| Category | Carbon Standard Category |
| 1/2/3 | GHG Protocol Scope |

Upstream Emissions — Category U 3
Upstream emissions relating to the embodied carbon of hardware and the development of software.

Software
- Off The Shelf including Open-Source Software

Hardware Manufacture, Transport and Installation
- User Hardware (laptops, printers, etc.)
- Networking and Infrastructure Hardware
- Servers and Storage Hardware

Operational Emissions
Operational emissions are associated to the running of business IT functions and systems. Each operational function may have a hybrid of IT infrastructure across direct and/or indirect emissions.

Direct — Category O 2
Direct running costs that are attributed to the electricity powering servers, networks and devices.
- User Devices
- Networking and Infrastructure
- Servers and Storage
- Generators — Category O 1

Indirect — Category C 3
Indirect running carbon costs that are attributed to external hardware and service solutions.
- Cloud Services
- SaaS
- Managed Services

Downstream Emissions — Category D 3
Carbon associated with the use of products and services produced by the business.

End Use (B2B, B2C)
- End-User Devices
- Network Data Transfer

Out of Scope
- People, Buildings and Travel

Technology Carbon Standard by Scott Logic is licensed under CC BY-NC-SA 4.0

7. Are you taking a proactive approach to understanding future scenarios?

As the world changes, as well as technology - trends and permatrends wax and wane - it's always good practice to examine your product or service under different lights, understanding how it will affect or be affected by changing times.

There are many different approaches to futures and scenario mapping - I personally really enjoy using the Tarot Cards of Tech, but some of the ODI's resources in this area are incredibly helpful too.

Understanding potential impacts – through environmental, social and economic lenses, considering positive and negative projected outcomes, will enable you to plan more holistic activity and mitigate risks.

Emma Robertson
CEO at Transform

"We want our clients to be empowered by the impact they can have – not choosing between business value or sustainable outcomes. At Transform we believe that doing things in the right way unlocks value on all fronts – efficient, effective products and services delivered in the most sustainable way possible"

Transform

8. Are you supporting humans to create lasting, transformative change?

This question is arguably the most important – it's challenging to create lasting, sticky change that makes sense for humans.

Habit change – altering the way people do things in the long term - is hard. Humans aren't always wired to do the most efficient or 'good' thing.

As creators of services and software, we can support people in making the right decisions and behaviour changes. Whether that's by delivering nudges inside customer-facing products and services, or is more internally focussed at employees to consider the size of an attachment before sending, which emails to keep, or to think about whether everyone needs cameras on for a digital workshop.

Some excellent resources here come from the behavioural psychology greats – Nudge, Influence, Thinking fast and Slow. Incorporating these techniques can support people in creating new habits.

We can also make it easier for humans to do the right thing – resetting the defaults in an organisation towards the sustainable choice can take the pressure off decisions for individuals.

I'd love to see more 'self-destruct' content, disappearing after a certain time if unused!

Finding champions of sustainability within an organisation can be the easy part, but then creating a coherent movement to co-ordinate that passion, directing towards measurable change over time is something that takes positivity and perseverance to bring everyone on the journey.

As with any change, it's important for people within an organisation understand the 'why' – and how change will benefit them specifically. Never underestimate the importance of clear, regular communications, to articulate the vision for the world we want to step into. How each of us can make small decisions that clearly ladder up to bigger changes is a motivating force and leads us towards that hopeful vision for the future.

How will we know we're winning? I'm looking forward to the time when 'Sustainability' (just like 'Digital') pretty much disappears from job titles, because it's just part of how we do business every day - when it becomes everyone's responsibility to build products and services that benefit people, planet and deliver long-term prosperity. I hope to see you there!

How each of us can make small decisions that clearly ladder up to bigger changes is a motivating force.

If you're on a sustainability journey and getting into the weeds of measuring and optimising your digital services, we'd love to hear from you. Also please do share your favourite methodologies and resources in this space – we're always learning and growing, and keen to connect with new thinking!

Claire Robinson
Director of Sustainable Business Consulting
Email: Claire.Robinson@transformUK.com

Transform

60 Great Portland St
London, W1W 7RT
Tel: +44 (0)20 3128 8000
TransformUK.com