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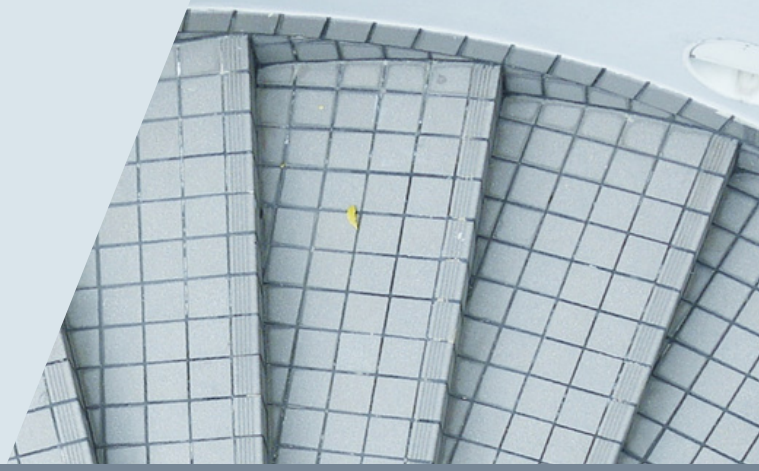

HOW CAN BUSINESSES THRIVE IN A SUSTAINABLE ECONOMY?

FOREWORD

This is a time of crisis. From climate and ecological breakdown to extreme inequality and poverty, we can no longer ignore the alarms warning us to create a new economy that leave behind business-as-usual. What's needed now is a new era, with an economy that meets the essential needs of all people, and does so while respecting the life-supporting systems of this delicately balanced living planet. This is Doughnut Economics in a nutshell.

For those in business and finance, all of this means a transformation that will allow them to belong to the economy of the future, where people and planet thrive. It points to a redesign of business that is deeper than words and commitments, but gets into the structures of ownership and governance, and critically its relationship with finance. This is not an easy task for businesses and financiers designed for 20th Century realities of capital scarcity, not equipped to deal with the crises of the 21st Century.

As Sara, Mariana and Pablo insightfully set out in this report, the future is already here. Innovations are being driven across the world of business and finance, as businesses embodying purpose in their deep design, emerge to unlock new strategies and ideas focused on creating benefits for people and our living planet. Enabled by models like steward-ownership, platform cooperativism, social enterprise and employee-ownership, we're seeing businesses like Patagonia, Mondragon, Riversimple and FairBnB pursue ground-breaking regenerative and distributive ideas. Do spot the link between what these companies are doing, and how their actions are enabled by the deep design of these businesses, in the case studies throughout this report.

Ideas like modular product design, profit sharing with workers and supply chains, and creating factories that behave like forests (e.g. sequester carbon, clean groundwater) already exist but are often on the fringes of their industry. The thriving future we are creating requires transformations that are laser-focused on enabling those bold ideas, which too often are held back by outdated models and ideas such as shareholder primacy, profit maximisation and stakeholder exclusion.

Those wanting to belong to the future economy – where the needs of all people are met on a thriving planet – are already unleashing their ambition and transforming the deep design of their businesses and investments. I hope they take inspiration and guidance from the concepts and examples presented in this report as part of their journey.

Erinch Sahan, Business & Enterprise Lead
Doughnut Economics Action Lab (DEAL)

EXECUTIVE SUMMARY

The current economic system and business models with a continuous aim for growth - and consequently resource use - pose great challenges to social and environmental sustainability. Various alternative sustainable economic models have been developed including Doughnut Economics, the Genuine Progress Indicator, and the Happy Planet Index. While in this report we have focused on Doughnut Economics, we recognise that these different methods are broadly aligned by the idea that human wellbeing, ecological limits, and inequality must be central to society's goals to achieve a sustainable economy.

These different sustainable economic frameworks have not deeply explored what the implications are for businesses of a society that has reoriented its objectives in this way. This report presents the key sustainability challenges of contemporary business models, as well as a framework for how businesses can tackle these challenges and adapt to a sustainable economy by addressing five main characteristics presented in a Sustainable Business Model Canvas.

The Doughnut Economics model is a framework for a sustainable, regenerative, and distributive economy where both society and nature thrive. It is based on a social foundation in which society needs to provide a life of dignity and opportunity for all, and an ecological ceiling presenting the planetary boundaries of the earth.

Contemporary business models can be characterised by the continuous aim for growth and profit maximisation. This report has identified five unsustainable characteristics that need to be addressed if business is to thrive in a sustainable economy:

1. Linearity, and the take-make-waste structure.

2. Short-termism, and its effect on sustainability in business operations.

3. Growth and profit maximisation, and its links to consumerism and the great acceleration.

4. Exploitative and unequal distribution of value within the supply chain.

5. 'Operational efficiency', 'win-win' and other incremental approaches to business sustainability strategies, and its failure in addressing core issues in contemporary business models.

The report compares the Doughnut Economics framework to established sustainable business model characteristics to understand how well they meet the demands of a sustainable economy. In doing so, five areas emerge which businesses will need to address if they are to thrive in a sustainable economy:

PURPOSE

i. A sustainable business must have a purpose beyond making a profit,

ii. with boards and management teams adopting a stewardship mindset and role in creating social and/or natural value alongside sustainable financial returns.

ORGANISATION

i. A sustainable business' ownership structure should recognise how it effects value distribution in the supply chain to ensure decent work and more equitable capturing of value created throughout the value chain.

ii. Business owners and management must exercise a long term mindset for organising and investing in the business for long term value creation.

iii. A sustainable business is dependent on a network with an aligned perception of sustainability, to ensure sustainable practices across its value chain, from suppliers and partners, to customers.

iv. A sustainable business needs to ensure corporate governance supports sustainable operations through environmental, social and governance (ESG) practices, reporting, networks, and cooperation within and across industries.

CIRCULAR AND REGENERATIVE PRODUCTION

i. A sustainable business should aim for the full life cycle of its products or services to be regenerative, circular, efficient, and non-polluting.

DELIVERY OF PRODUCT OR SOLUTIONS

i. A sustainable business should encourage sufficiency, tackling the demand of their products with models that do not rely on continuous growth in material throughput or unnecessary and unsustainable consumption.

IMPACT

i. A sustainable business should continuously assess and measure its social and environmental impacts to ensure that they are delivering on the business's purpose and values.

SUSTAINABLE BUSINESS MODEL CANVAS

FOUNDATION

PURPOSE

WHAT IS THE BUSINESS' PURPOSE?

Why does the business exist?
What values does it create, socially and/or environmentally?
How is the created value sustainable?

ORGANISATION

OWNERSHIP	VALUE DISTRIBUTION IN THE SUPPLY CHAIN	NETWORKS	OPERATIONAL TIMEFRAME	GOVERNANCE
What is the ownership model? What are the owners' main objectives and how might that affect sustainability?	How is the value distributed and captured throughout the supply chain?	Who are the business' key stakeholders? What are their values, and do they align with those of the business? How is the company partnering with other actors to tackle challenges and facilitating the necessary ecosystem?	Does the business operate with short or long term objectives and what are the effects on sustainability?	How does the business govern its operations? What frameworks are used to report on environmental, social and governance (ESG) practices?

OPERATION

PRODUCTION

HOW DOES THE BUSINESS PRODUCE ITS PRODUCTS/SOLUTIONS?

How does it promote efficiency in terms of energy and resource use?

How does it promote a circular production? How does it create value from waste?

How does it utilise renewable and natural processes?

DELIVERY

HOW DOES THE BUSINESS DELIVER ITS PRODUCTS/SOLUTIONS?

How does it encourage sufficiency in the consumption of its products/solutions?

How does it offer circular user models, such as sharing and leasing models?

How does it design for circularity by other means by taking back, reusing and recycling of products?

How does it dematerialise its products or optimise the durability of the products by digitisation?

IMPACT

WHAT IS THE TOTAL IMPACT OF THE BUSINESS?

Has the business achieved its purpose?
What environmental and/or social value has been created? Is it sustainable?
What externalities has the business created, both positive and negative?

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1 INTRODUCTION

1.1 BACKGROUND

The climate and environmental crises, coupled with vast and increasing human inequalities are perhaps the biggest challenges humanity has ever faced. Changes to our climate from increasing concentrations of greenhouse gasses in the atmosphere, ocean acidification, pollution, and the loss of biodiversity are driven by human activity, while simultaneously undermining the foundations of human prosperity (1).

Vast and growing social economic inequalities including a significant, albeit falling, number of people lacking fundamental necessities, is contrasted by a relatively small number of people with unprecedented wealth and a prevailing culture which celebrates conspicuous consumption. The United Nations estimates that annual global food waste is 931 million tons, while the latest estimate (2019) shows that 690 million people did not have sufficient access to food (2).

The current economic system is built on principles of continuous growth and profit, where value is defined by its capture through monetary gains rather than its creation through sustainable human development, often undermining the finite resources on which it is dependent. In several environmental areas, such as deforestation and concentration of carbon emissions in the atmosphere, human activities have gone beyond safe planetary boundaries, placing the welfare of future generations at risk (3).

There are biophysical and social limitations to the continuation of the current growth-driven and profit maximising economy, exemplified by Gross Domestic Product (GDP) as the main measure of development and progress in society. While GDP is effective at measuring economic activity, consumption and the production of goods and services, it was never intended to measure progress and economic and social welfare (4,5). It fails to adequately reflect the actual state of the economy and society, as it does not illustrate the distribution of income. Nor does GDP separate social and environmental value from harms and their effect on the store of social and environmental capital on which societies rely, for example counting the destruction of forests as additive

to GDP but ascribing no value to leaving forests in place.

Ultimately, there are fatal flaws in the current economic system. It is built on unsustainable principles of continuous growth and profit maximisation, and is linked to increasing environmental challenges and social inequalities. There is an urgent need to rethink and rebuild the economic system. Alternative economic models, like Doughnut Economics, are built on principles of a sustainable and just society where humanity thrives within planetary boundaries (6). This report utilises this model to define a sustainable economy and further investigate how business models needs to change to fit into such an economy.

The finance industry plays a crucial role in facilitating trade, protecting assets, and allocating financial capital in the economy. To achieve sustainable development and a sustainable economy, the finance sector needs to align its activities with the Sustainable Development Goals (SDGs). This means that investments need to be based on principles of 'strong' sustainability, where economic activities occur within social and environmental boundaries, while avoiding harm (7).

The global financial crisis exposed a financial industry dominated by speculation, short-termism, and self-service. Even though the importance of sustainability has gained momentum in the industry over the last few years, current approaches to addressing sustainability within the sector have severe limitations.

While moving the focus from GDP to the Doughnut will support a change in focus from growth in one measure, to optimising social and environmental health across a range of measures, contemporary business models may not be able to adapt, and without change are more likely to inhibit, not promote, progress. The resolution of the great sustainability challenges of our time cannot happen without the support of private enterprise and private capital. Policy changes which shift focus to the Doughnut need to be married with supporting business model changes that can bring it about.

This paper highlights the limitations and misalignment of current business models with the objectives of the Doughnut, and makes recommendations for how business models can adapt and thrive in a sustainable economy as defined by the Doughnut Economics model.

2 ACHIEVING A SUSTAINABLE ECONOMY

2.1 INTRODUCTION

The contemporary economic system and the continuous aim for growth is closely correlated to the great acceleration of resource use and generation of waste, greenhouse gas (GHG) emissions and environmental degradation, particularly since the end of the Second World War (1). Governments across the world, illustrated in the United Nations Sustainable Development Goals (SDGs) (8), have committed to addressing global sustainability challenges posed by the current economic system. For 2022, according to the Global Footprint Network, the world used up its annual natural resource capacity on July 29 2022, meaning society is in overshoot for almost half the year (24).

If the world is to achieve the SDGs and attain an economy that stays within the ecological limits of the planet, new economic thinking is needed. Several schools of thought have emerged over the last decades presenting alternative economic models to deal with these issues (1). Some popular perspectives include Circular Economy (9), Green Growth (10), Steady-State Economy (11), Degrowth (12), and Doughnut Economics (6). They will be used to reflect on what defines a sustainable economy with emphasis on the Doughnut Economics, in combination with the United Nations Sustainable Development Goals and the Global Footprint Network.

2.2 SUSTAINABLE ECONOMY ALTERNATIVES

Ecological economics is a transdisciplinary field of academic research that addresses the relationship between natural ecosystems and economic systems (7). From an ecological economics lens, sustainability can be distinguished between ‘weak’ and ‘strong’ approaches.

Weak sustainability refers to the assumption that the economy and society can exist independent of the environment, and that critical natural capital can be replaced or traded off with other forms of capital (13). This is often illustrated in the triple bottle line or the balancing approach to sustainability as visualised on the left in Figure 1 (14).

FIGURE 1: THE THREE PILLARS OF SUSTAINABILITY, CHARACTERISED AS EITHER WEAK (LEFT) OR STRONG (RIGHT) SUSTAINABILITY

Strong sustainability, on the other hand, refers to the understanding that critical natural capital cannot be replaced by other forms of capital, such as financial capital (7). This understanding is visualised in the second image of Figure 1, where there is a hierarchical relationship between the environment, society and economy, and all societal and economic activities needs to be kept within planetary boundaries (14).

The Green Growth perspective (10), also referred to as corporate environmentalism, is an example of a weak sustainability approach. It assumes that technological innovation will enable absolute decoupling of resource use and pollution from economic growth and that growth can continue infinitely (14). Empirical evidence, however, illustrates that absolute decoupling of resource use and pollution from economic growth is not possible (10).

The Circular Economy is defined as "designing out waste and pollution, keeping products and material in use, and regenerating natural systems''(9). The principle has been widely discussed and several governmental bodies worldwide have adopted this framework into their sustainable development strategies, however, often combined with green growth (15). The 'Green Growth' principle argues that economic growth can be decoupled from emissions and resource use, which represent a 'weak' sustainability approach due to the limitations of circularity as discussed in section 3.2.(16).

Photo by Niklas Morberg, Getty Images

However, the Circular Economy concept is also consistent with and forms a key plank of Doughnut Economics, which represents a 'strong' sustainability approach. As a result, the circular economy school can be utilised in both weak and strong sustainability approaches.

The Degrowth Economy (12) perspective promotes reasonable downscaling of production and consumption in the developed economy to a level that can sustain human needs and wellbeing without overshooting ecological boundaries. It also replaces the driver for growth with a driver for improvement (17).

It has however, received criticism in relation to the feasibility of decoupling human wellbeing from economic growth (18).

The Steady-State Economy (11) is based on the theory of attaining a constant sustainable state of the economy which can facilitate equity and wellbeing within planetary boundaries. The idea is to have a constant stock of capital and population utilising a steady flow of natural resources throughout the system (19). Both the Degrowth Economy and Steady-State Economy are strong sustainability approaches.

2.3 DOUGHNUT ECONOMICS

Doughnut Economics (6) is an economic model developed by the English economist Kate Raworth, which provides an alternative model to growth economics, with a strong sustainability approach. Doughnut Economics is visualised in Figure 2 as reflecting both planetary and social boundaries. The key aim of the model is to re-frame economic problems, and to achieve a system where people and nature flourish.

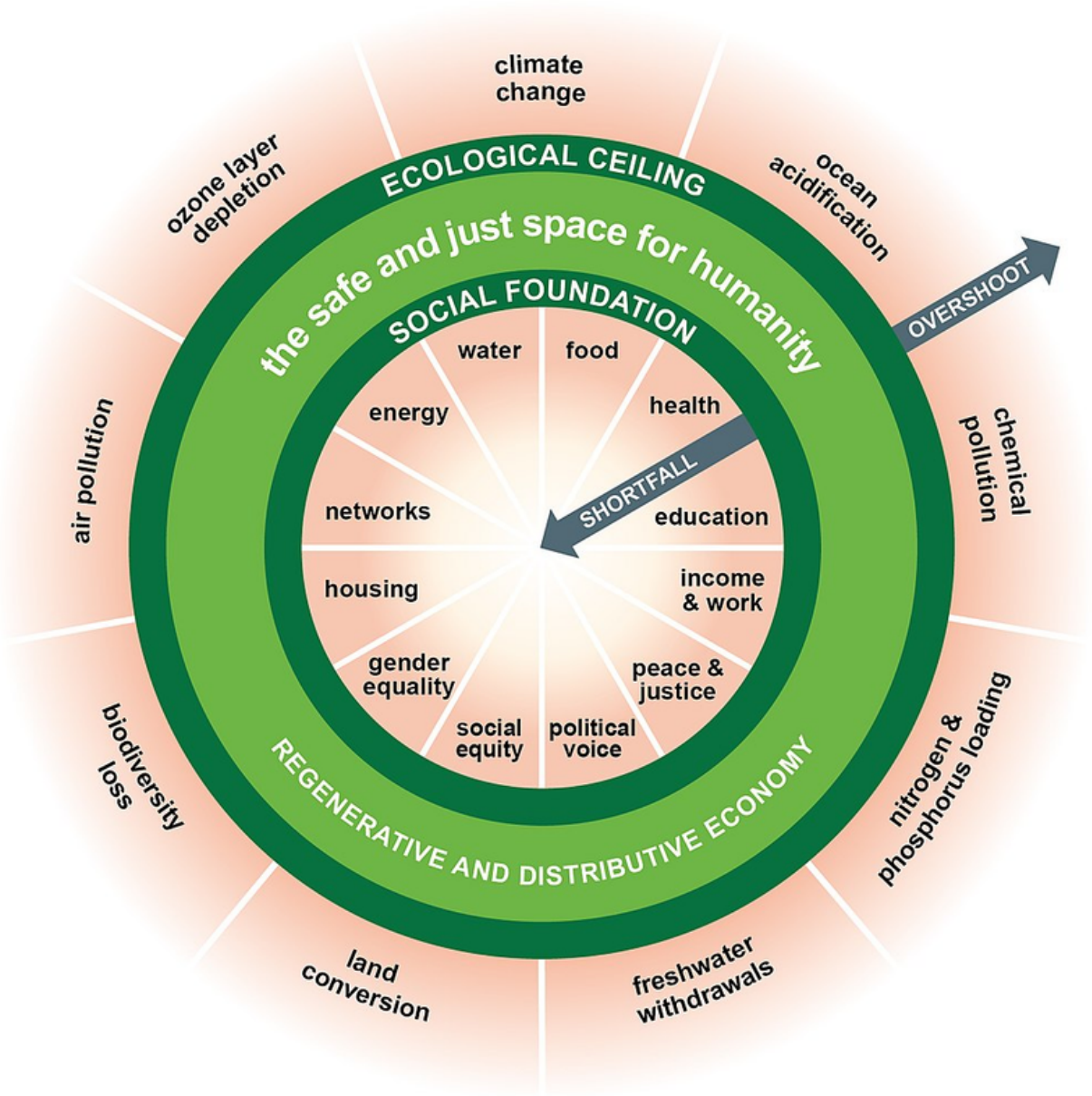


FIGURE 2: THE DOUGHNUT OF SOCIAL AND PLANETARY BOUNDARIES (6)

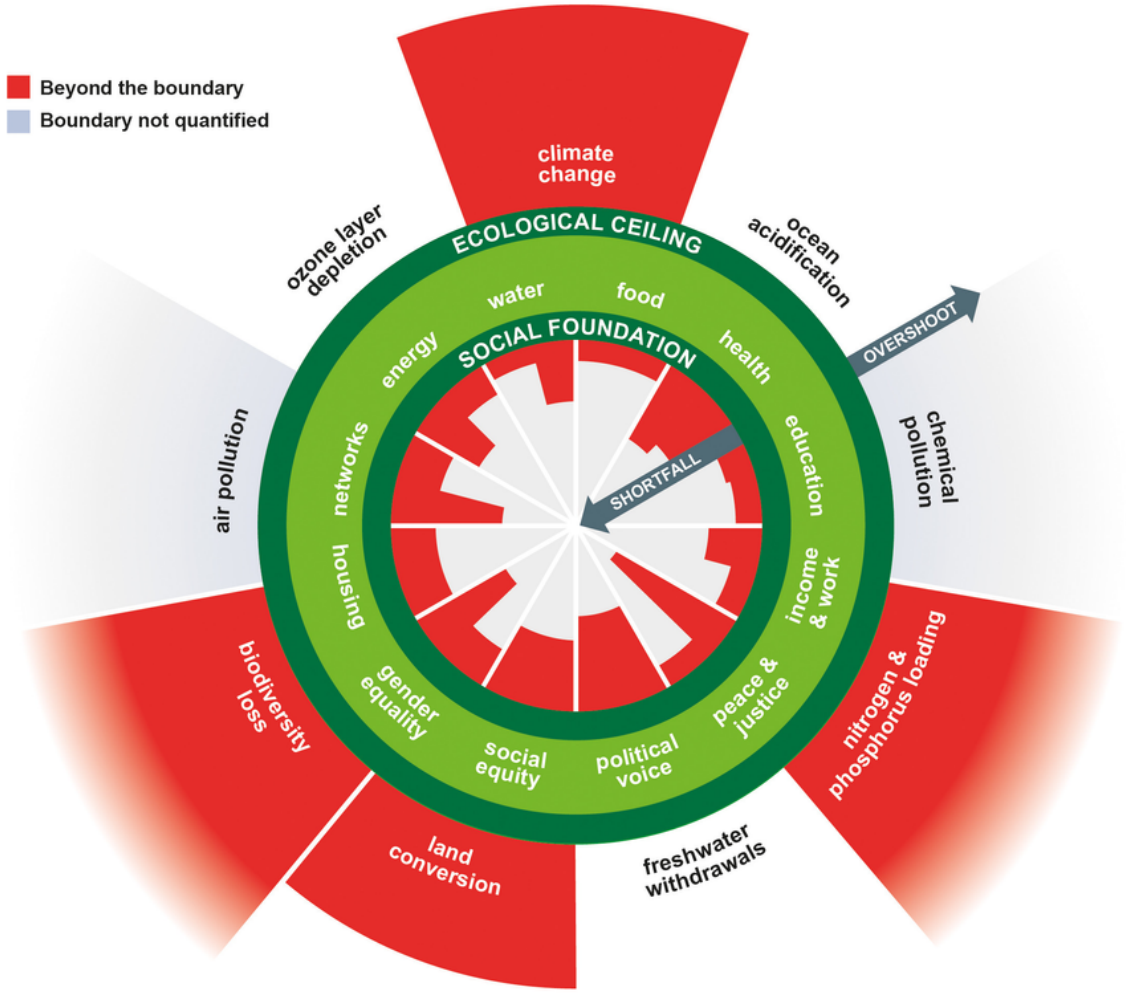


FIGURE 2 (CONTINUED) AREAS OF CURRENT SHORTFALL AND OVERSHOOTING)

THE MODEL

The Doughnut represents a safe and just space for humanity within planetary boundaries. This is a regenerative and distributive economy, where societal needs are met, and society thrives within planetary boundaries.

The outer crust of the Doughnut represents an ecological ceiling using the planetary boundaries framework developed by the Stockholm Resilience Centre (3). The resource use and pollution exceeding the ceiling represent overshooting beyond planetary boundaries and is not sustainable. The ecological indicators defined in the model are: climate change, ocean acidification, chemical pollution, nitrogen and phosphorus loading, freshwater withdrawals, land conservation, biodiversity loss, air pollution and ozone layer depletion.

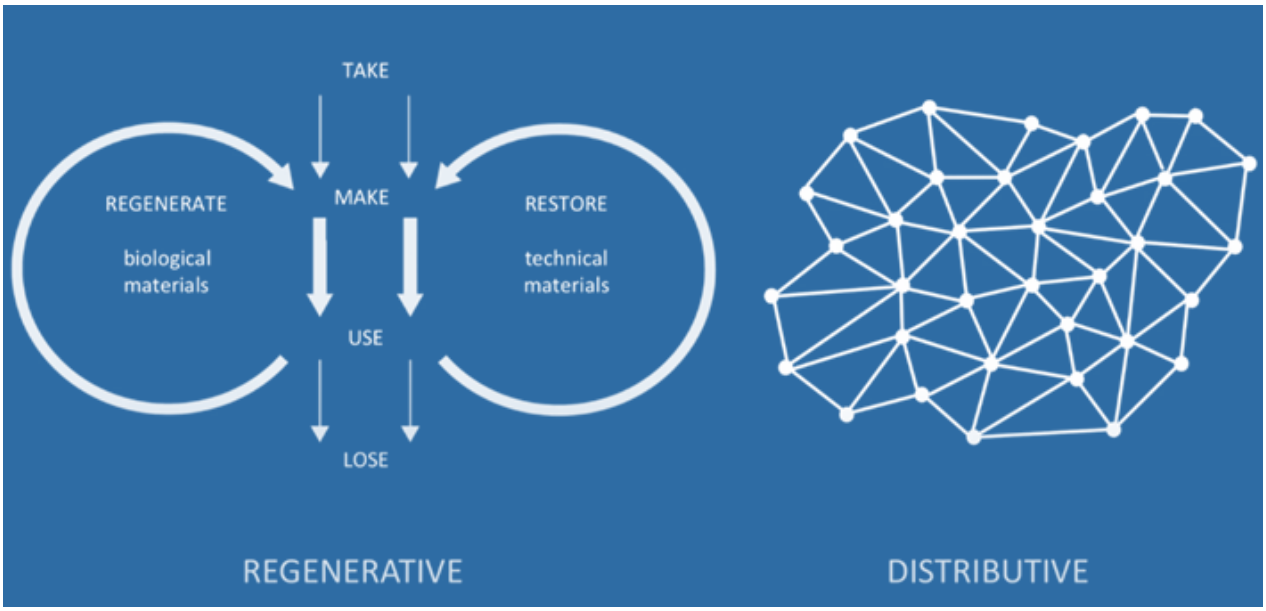


FIGURE 3: A REGENERATIVE AND DISTRIBUTIVE ECONOMY AS DEFINED BY THE DOUGHNUT ECONOMICS ACTION LAB (25)

The inner circle of Figure 2 represents the social foundations society needs to provide a life of dignity and opportunity for all. The hole in the centre of the Doughnut represents the portion of people globally that lack access to life's essentials. The social indicators are food, water, education, income and work, peace and justice, political voice, social equality, gender equality, housing, networks, and energy.

As illustrated in Figure 3, an economy within the Doughnut needs to be regenerative and distributive for it to provide a social foundation and simultaneously not overshoot the ecological ceiling. An economy that is distributive by design aims to share value more equitably amongst the various actors that help generate it. This is opposed to the current divisive economy where financial capital and labour are often presented as opposing forces with the environment as a free and limitless resource.

The emergence of technological development (Third/Fourth Industrial Revolution; Internet of Things; Artificial

intelligence; Zero marginal cost; Blockchain technology; Renewable energy etc.), represents platforms and networks that can better enable a regenerative and distributive economy than ever before (20, 21, 22). These hold the opportunity to enable more distributive wealth, power, and knowledge, as well as access to political and social participation.

An economy within the Doughnut would also need to be agnostic about growth, where the goal of the economy would change from GDP growth, driven by continuously increasing consumption, to one centred on humanity that thrives in balance with nature. Where success and development are defined not by monetary value, but by societal value, such as community, belonging, individual participation, purpose, and personal development.

Moreover, an economy within the Doughnut would need to be regenerative and circular, where products and systems design out waste and pollution. This is built on similar elements as embedded in the Circular Economy discussed earlier, and as promoted by the Ellen MacArthur Foundation, a charity with the aim to help accelerate the transition to a circular economy focusing on business and government, education, insight and analysis, and communication (9).

BENEFITS AND LIMITATIONS

Doughnut Economics is used to define a sustainable economy in this report as it encompasses a strong sustainability approach and simultaneously addresses a social foundation for human needs and development. As a result, Doughnut Economics has gained international acknowledgement. Experts support Raworth's identification of what a good society operating within planetary boundaries equates to (23). Moreover, there is support for Raworth's critique of the contemporary economic system in how it leads to inequalities, excessive consumerism and overshooting of ecological constraints, as well as the need for an alternative regenerative and distributive economy.

Photo by Alexander Grey, Unsplash

Doughnut Economics is not, however, a set of policies, but a way of thinking and can be used as a tool to guide policies and actions towards a sustainable economy. Accordingly, there are concerns about governance of, and responsibility for, achieving an economy within a safe and just space, and how to attain that preferred state (23). There is also a lack of analysis of the fundamental mechanisms underlying the current economic and social system.

Despite various sustainable business frameworks addressing different parts of a sustainable business model, there are a lack of initiatives which address redistribution, regeneration and growth agnostic economies, and consider the totality of a company's organisation and design and its implications on sustainability. This report seeks to address how the contemporary business model will need to change to adapt and thrive within a sustainable economy as defined by the Doughnut Economics model.

Rather than focus on policy or top-down economic interventions, this report leverages current approach to business sustainability, and identifies inconsistencies with the principles and outcomes embedded within the Doughnut Economy framework and the ways these might be addressed.

QUESTIONS TO CONSIDER

How do we measure well-being, and what will replace GDP?

How can we manage the commons?

How do we ensure a drive for innovation without current incentives?

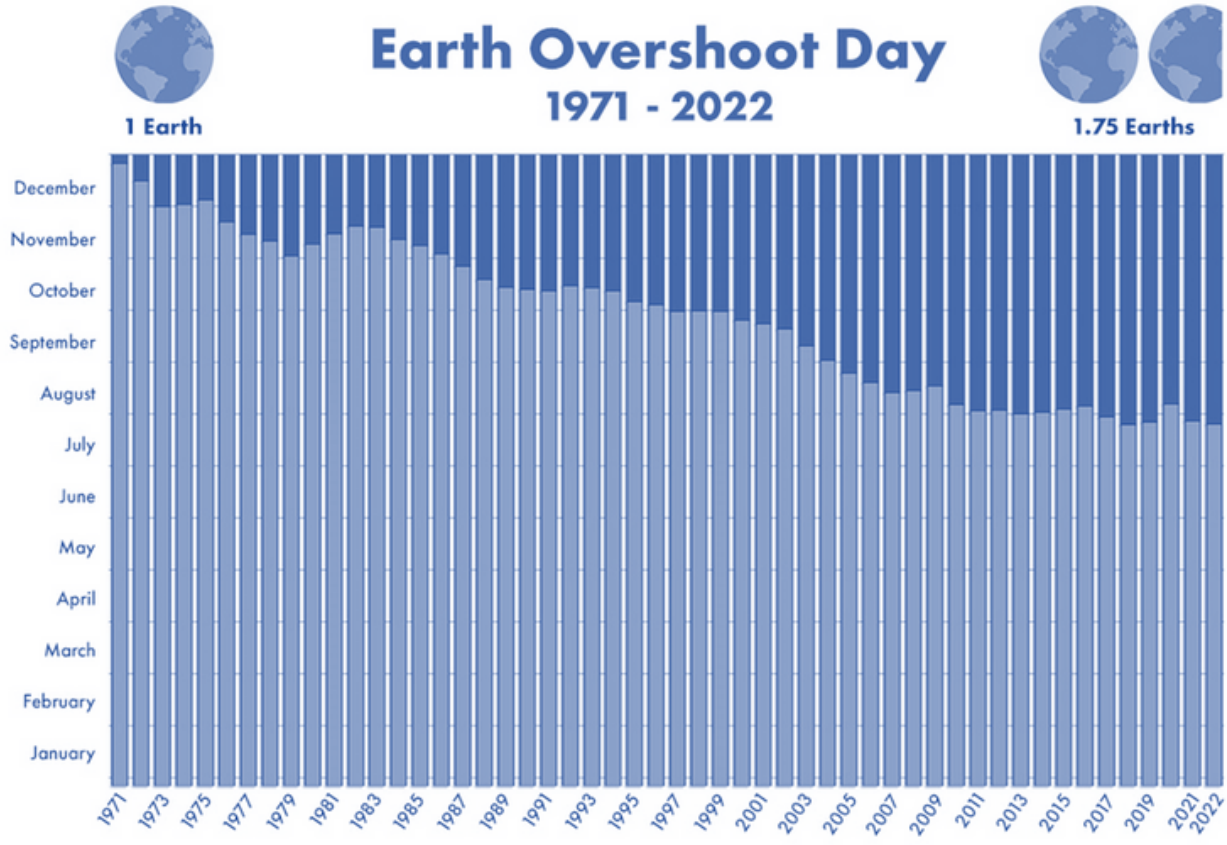
How do we ensure and govern an equal and decent level of material consumption within planetary boundaries globally?

By what means can a business thrive, when guidance is lacking, and when change is perceived as risk?

What can business leaders do to enable such change?

GLOBAL FOOTPRINT NETWORK

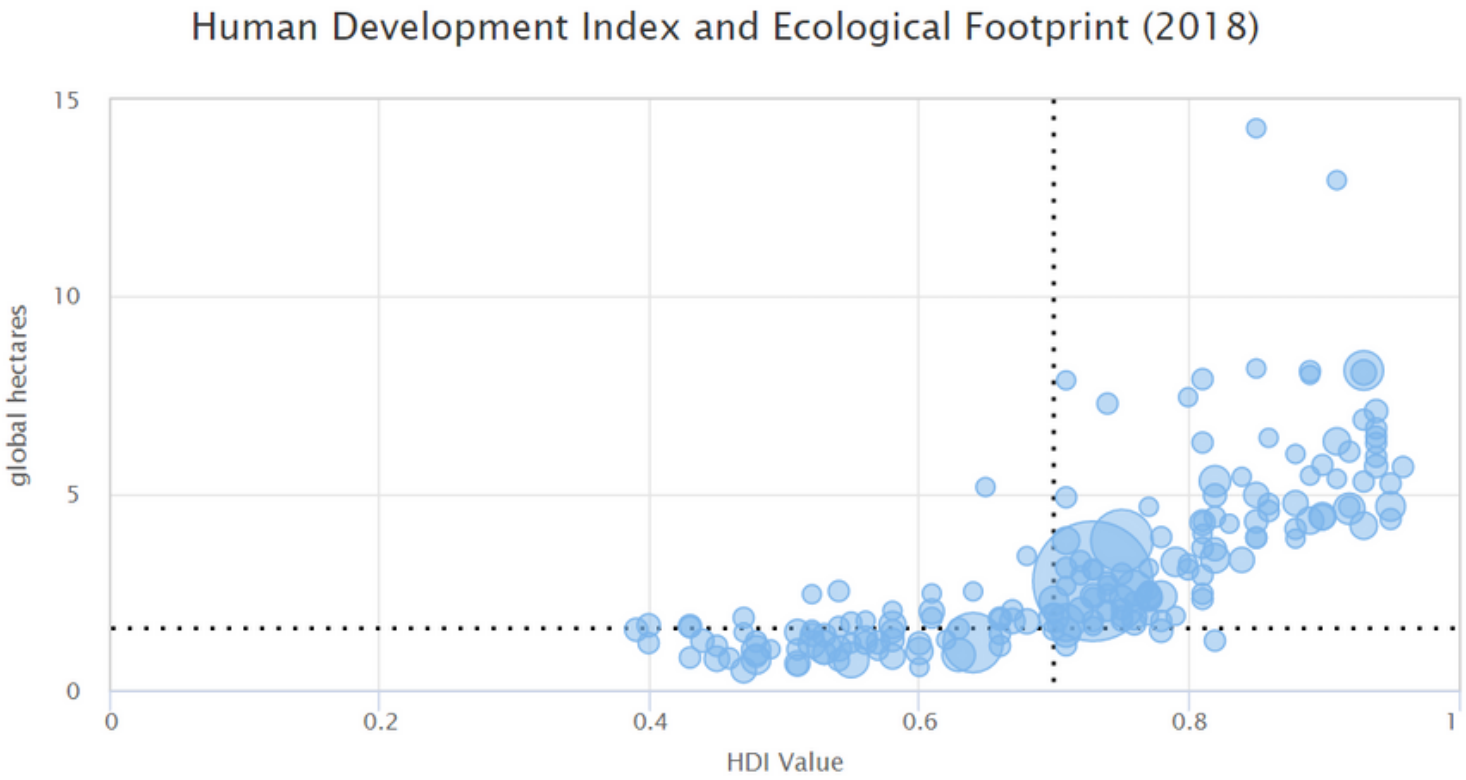
Other frameworks also demonstrate the imperative for society to adjust its goals to reflect actual human wellbeing within planetary boundaries. The Global Footprint Network is a think-tank which has sought to address sustainability from a scientific approach, comparing resource use of individuals, businesses, and governments against the planet's capacity for ecological regeneration (24). Using the ecological footprint tool, the Global Footprint Network developed the concept of 'world overshoot day', the day each year where humanity has used more resources than the planet can regenerate.



Source: National Footprint and Biocapacity Accounts 2022

To measure the sustainable development of a country while incorporating human needs, the Global Footprint Network uses two main indicators: the United Nation's Human Development Index (HDI) and the Ecological Footprint. The HDI is a metric that measures wellbeing of a population by assessing the longevity, access to education and income. A HDI above 0.7 is defined as a high human development. The Ecological Footprint measures human resource use against nature's capacity of biological regeneration. An Ecological Footprint below 1.6 global hectares per capita represent a globally replicable resource demand. However, with a growing population and wild species' need for biocapacity, the global average Ecological Footprint needs to be well below 1.6 global hectares. Combining the two indicators and mapping them against each other illustrates the minimum condition for sustainable human development on a global scale.

As the model below illustrates, where the blue dots represent different countries globally, there is a vast gap between both global hectares per capita (y-axes) and the HDI values (x-axis). The global average in 2018 was an HDI value of 0.73, and global hectares per capita of 2.77. This illustrates that the resource use globally is well above the ecological limits.



Source: Global Footprint Network, 2019 National Footprint Accounts

Source: Sustainable Development Goals, United Nations

THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Another framework that illustrates what constitutes a healthy and just society and environment are the Sustainable Development Goals (SDGs) (8). The goals were set by the United Nations General Assembly in 2015 and consist of 17 goals presenting a blueprint to attain peace and prosperity for people and the planet. Each goal has specific targets with indicators used to track progress. All 193 member countries of the UN General Assembly have agreed to work towards achieving these goals by 2030. The SDG Tracker is one of several tools that can be used to assess different countries progress towards achieving the goals and specific targets.

Measuring progress towards the Sustainable Development Goals - SDG Tracker (sdg-tracker.org).

The 17 goals are; 1. No poverty; 2. Zero hunger; 3. Good health and wellbeing; 4. Quality education: 5. Gender equality; 6. Clean water and sanitation; 7. Affordable and clean electricity; 8. Decent work and economic growth; 9. Industry, innovation and infrastructure; 10. Reduced inequalities; 11. Sustainable cities and communities; 12. Responsible consumption and production; 13. Climate action; 14. Life below water; 15. Life on land, 16. Peace, justice and strong institutions; and 17. Partnerships for the goals.

The SDGs cover social, environmental, and economic challenges, and can give an indication of how sustainable a company is. Companies can analyse which goals are applicable, and how it is either contributing towards achieving the goals or minimising harm. For example, a healthcare company can link its purpose to contributing towards Goal 3. Good health and wellbeing, and assess its operations in relation to Goal 5. Gender equality, working actively to ensure equality between genders, Goal 12. Responsible consumption and production and Goal 13. Climate action, to ensure it minimises its harm in production and delivery of its products.

Ultimately, a sustainable economy must operate within environmental limits, and preferably promote a flourishing environment, while meeting human development needs. This can be defined in different ways including one that fits into the Doughnut, is distributive and regenerative, supports development aligned with the SDGs, with a global HDI above 0.7 and global hectares per capita well below 1.6.

This report focuses on the Doughnut Economics framework in understanding the implications for business, as it not only provides the floors and ceilings which businesses must operate within, but also methods and principles for how to achieve them. However, before exploring these, we must consider the limitations with contemporary business models in relation to a sustainable economy.

Source: Sustainable Development Goals, United Nations

3 WHAT ARE THE MAIN SUSTAINABILITY ISSUES WITH THE CONTEMPORARY BUSINESS MODEL?

3.1 INTRODUCTION

A central element in the current economic system is the model of profit maximising businesses. Several features of the economic system, described in the previous section and in the literature as unsustainable, are reflected in this model. Transitioning towards a more sustainable economy calls for fundamental shifts. As illustrated in Figure 4, this section of the report will explore five of the more significant limitations to current business models from a sustainability perspective. These are:

1. Linearity, and the take-make-waste structure.

2. Short-termism, and its effect on sustainability in business operations.

3. Growth and profit maximisation, and its links to consumerism and the great acceleration.

4. Exploitative and unequal distribution of value within the supply chain.

5. Operational efficiency, 'win-win' and other incrementalistic approaches to business sustainability strategies, and its failure in addressing core issues in the contemporary business model.

While we examine these issues separately, they are not mutually exclusive but rather mutually reinforcing and highly interrelated.

FIGURE 4: FIVE LIMITATIONS OF CONTEMPORARY BUSINESS MODELS

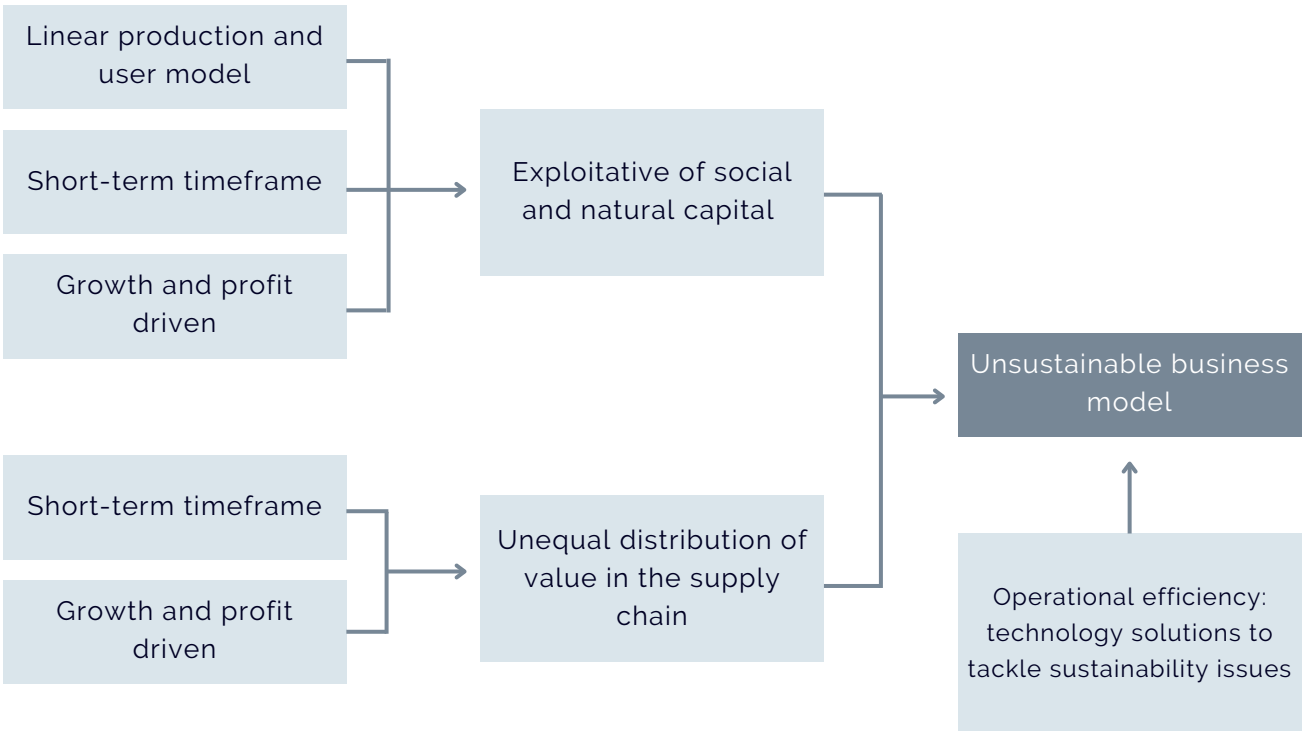


FIGURE 5: MUTUALLY REINFORCING ELEMENTS OF THE UNSUSTAINABLE BUSINESS MODEL

3.2 LINEARITY, AND THE TAKE-MAKE-WASTE STRUCTURE

Linearity is an important characteristic of the current business model. It is based on a take-make-waste model, where corporations extract resources and materials from nature to produce products that are designed to be discarded, often after a short period (9). The model does not account for finite resources, nor the negative effects that production and waste creation have on the planet.

This poses several sustainability issues. With a linear production and user model, business is in continuous need to extract and use natural resources, many of which are already scarce. Waste creation is also a major sustainability issue, with most waste ending up in landfill or in nature/the ocean. Moreover, the linear model incentivises shorter product lives, which further leads to increasing resource use and waste creation (26).

According to the World Bank, global waste is predicted to grow by 70% in 2050 without urgent action, from 2.01 billion tons in 2016 to 3.4 billion tons in 2050 (27). Countries across the globe have developed plans to transition towards a circular economy to tackle sustainability issues, such as waste generation and resource scarcity. The EU, as an example, has developed the Circular Economy Action Plan, as part of the European Green Deal towards 2030 and 2035 (15). However, there are technological limitations to the feasibility of recycling within the current system (16). In 2019, only 12% of waste generated in the EU was recycled (1). An important limitation is the lack of infrastructure to enable the waste to reach recycling facilities. However, even with an optimal infrastructure there would still be limitations to the recyclability of different materials, as current technology does not enable full recyclability. Designing out waste is therefore a critical part of any attempt at circularity.

CASE STUDY: H&M FAST FASHION

Between 2000 and 2015, global clothing production doubled, this is partly due to the linear business model of fast fashion which encourages bulk manufacturing of the latest trends. Fast fashion replicates typically expensive fashion trends through sourcing inexpensive textiles and using quick manufacturing methods to sell mass produced garments at a low price (28).

The constant supply of new fashion produced by companies such as H&M has reduced the average garment lifespan to only ten wears before ending up in landfill. The Ellen Macarthur Foundation calculates that every second, the equivalent of a rubbish truck load of clothes is burnt or buried in landfill (29). While fast fashion has made fashionable clothing cheaper and more accessible, the linear business model encourages operational inefficiency through high rates of unsold inventory. In 2019, H&M had $4.1 billion worth of unsold clothes. Unsold inventory is not only a financial risk but a reputational risk to businesses as consumers are increasingly conscious of the environmental footprint of organisations. Every year 13 million tons of textiles are wasted that could be recycled. A missed opportunity for fashion businesses to increase revenue and improve their reputation (30). Elements of circular business models in the fashion industry include resale, rental, repairs, remaking and recycling. Adopting circular elements can cut GHG emissions, improve customer satisfaction and reduce lost revenues from unsold stock.

In addition to the environmental impacts, the drive for speed and low cost has resulted in serious human and labour rights issues in the supply chains of fast fashion companies, including the 2021 Boohoo labour rights scandal and the collapse of the Rana Plaza Factory in 2013 (31).

3.3 SHORT-TERMISM

Another fundamental limitation to the current business model is the short-term focus and mindset of many businesses driven by market demands. Corporations today often have an excessive focus on short-term monetary results, thereby neglecting the long term consequences and opportunities for potential value creation (32). Short-termism has been widely identified as leading to underinvestment, poor corporate decision making, economic inefficiency, and undermining long term value creation (33). Ultimately, short-termism undermines the case for corporations investing in long term sustainability strategies.

Photo by Samer Daboul, Pexels

CASE STUDY: FISHER & PAYKEL HEALTHCARE

During the COVID-19 pandemic, Fisher & Paykel Healthcare, a globally leading New Zealand-based maker of respirators and dehumidifiers, had exploding demand for its products as they became essential for treating COVID patients in intensive care. The high demand meant the company could increase its prices to compensate for increased input and transportation costs; however, it chose to maintain prices, resulting in lower margins in the short term (34). This decision-built trust with its customer while further embedding its systems in hospitals and other healthcare settings. As the company operates a 'razor blade model' where consumables are required to use their machines, the decision not to take advantage of the global crisis will have long-term reputational benefits and lead to more predictable sales of consumables in the future (35).

3.4 GROWTH AND PROFIT MAXIMISATION

The aim for continuous economic growth is one of the key challenges in the contemporary economic system, driving unsustainable practices in profit-driven corporate operations. In a linear and growth-driven model, business seeks to maximise their profit by producing and selling as much as possible through increasing consumption of their products. This has led to product design that shortens product lifetime and increases sales, while increasing resource use and waste creation. Even though circular economy, efficiency, and technological innovation claim to tackle some of these growth-related issues, there are several limitations (1, 36, 37).

First, there are technological limitations to the recycling of resources in the current economy as addressed in section 3,2 on linearity (16). Accordingly, recycling needs to be accompanied by reducing, reusing and designing out waste in the products. Moreover, even with technological solutions in place, to achieve growth, there will be a continuous need for resource input (10).

Second, while efficiency and technological innovation can lead to a decrease in the resources needed to produce an output, empirical evidence suggests a rebound effect. Often referred to as the Jevons Paradox, an increase in efficiency often leads to more consumption rather than a decrease in resources used in production (38).

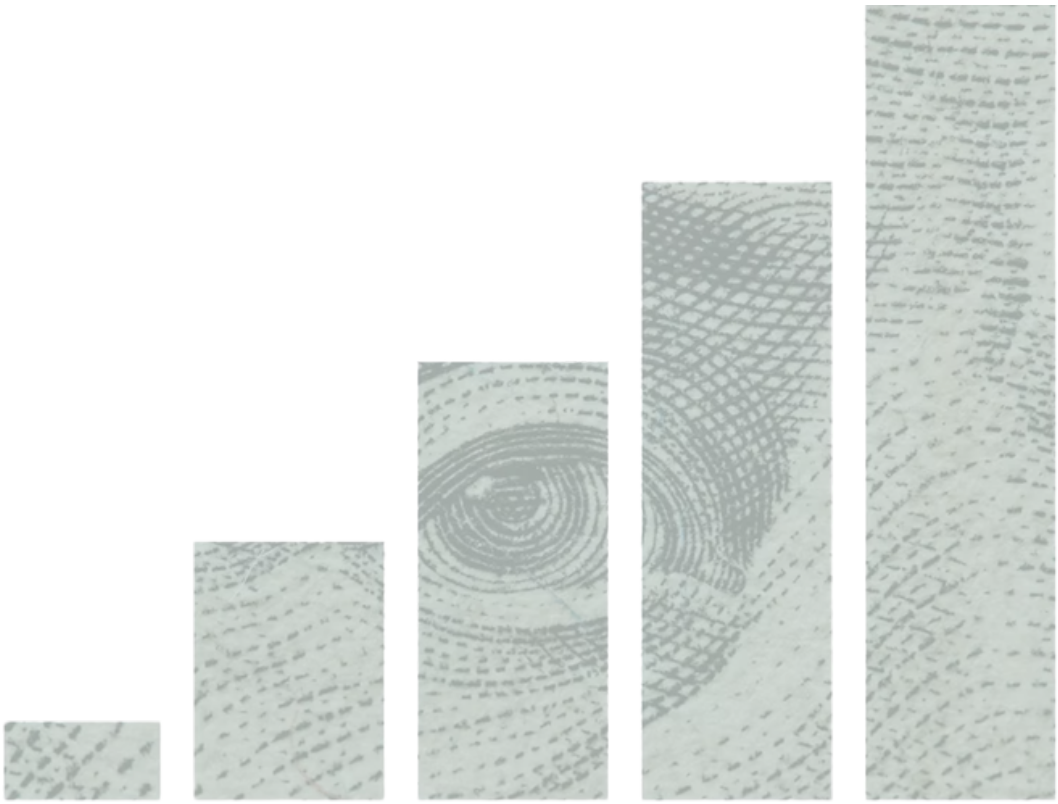


Photo by Morgan Housel, Unsplash

CASE STUDY:
MARGIRIS SUPER TRAWLER

Fisheries provide food and livelihoods for millions of people around the world. The latest figures estimate that global fishery production (pre pandemic) is 179 million tons, valued at USD 401 billion, the highest level recorded (39). Margiris, a super trawler, is the second largest fishing vessel in the world catching up to 250 tons of fish a day, equivalent to the weight of 20 buses. Owned by Parlevliet & van der Plas, a Dutch fishing company, the super trawler is an example of how the aim for continuous economic growth and profit maximisation drives unsustainable practices and neglects long term consequences.

FV Margiris photographed in the Dutch port of IJmuiden in 2016, photo by Alf van Beem

In 2012, Seafish Tasmania brought the Margiris to Australian waters, and renamed it the Abel Tasman, to fish for jack mackerel and red bait. Seafish Tasmania claimed that the super trawler would generate between $10 - $15 million annually for Tasmania and create 40 jobs (40). Despite the Margiris' massive 250 ton catch a day capacity, demonstrating its operational efficiency, the vessel's sophisticated technology meant that it would require fewer employees.

The arrival of the vessel was met with protest from local fisheries and environmental activists. Protesters argued that the super trawler's capacity would deplete Australia's fish stocks and disrupt marine biodiversity, harming protected species such as dolphins and seals which feed on jack mackerel and red bait. This led to the initial temporary ban of super-trawlers in Australian waters blocking the Margiris from operating. In 2014, Australia permanently banned super-trawlers over 130 metres long from operating in Australian waters. Research has evaluated the impact the Margiris would have had on Australian marine life, and findings include localised depletion impacting threatened species such as seals, seabirds and cetaceans. Unfortunately, the Margiris is still in operation in Europe (41).

3.5 EXPLOITATIVE AND UNEQUAL VALUE DISTRIBUTION: RACE TO THE BOTTOM

As a product of globalisation and outsourcing, cheap global labour costs are incorporated into the contemporary business model and are a crucial part of many companies' competitive advantage (42). As such, companies tend to move production to where labour costs can be minimised. Moreover, governments in developing countries are often dependent on foreign investment, and accordingly lower regulations, in order to keep and attract global corporations and investments (43, 44).

The combination of these factors has led to a phenomenon called the "race to the bottom'' (44). This phenomenon refers to host country manufacturers being pushed to cut corners in order to stay relevant to foreign corporations seeking to minimise their production costs (45). As host countries are often dependent on these foreign investments to grow their economy, regulations that support social and environmental protection are therefore lacking (43). This ultimately leads to poor social and environmental standards.

Globalisation and increased outsourcing have led to the development of global production networks that are highly complex, which further challenges supply chain control, transparency, and traceability (46). The social implications for the production industries of developing countries, often include poor health and safety conditions, low wages, long working hours and limited union power (45, 47). As illustrated in the 2013 Rana Plaza factory collapse where 1,132 people died, the consequences can be tragic (31).

The environmental implications are also significant, with business operations and processes in developing countries often leading to critical environmental degradation including deforestation, resource depletion, and air and water pollution. Ultimately, the global supply chain has a vastly unequal distribution of value, which is also exploitative and both socially and environmentally brutal.

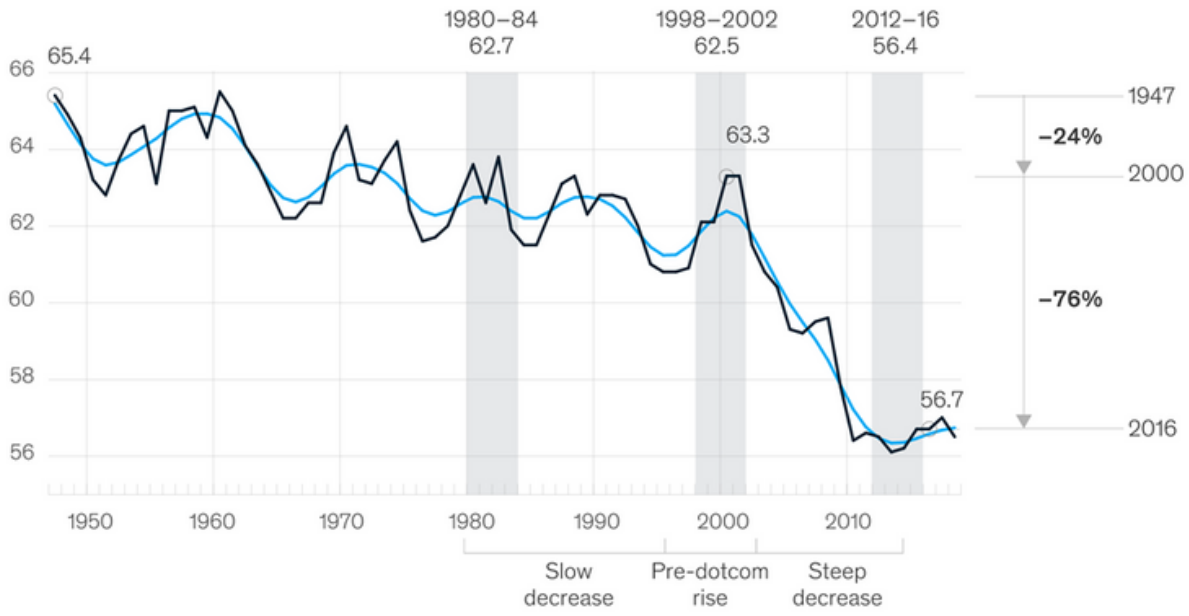
Moreover, heavy reliance on outsourcing not only affects the host country, but it also affects the originating country, through increased unemployment and rising inequality (48, 49). Other economic trends like the rise of the gig economy, where labour is collected from a pool of self-employed workers, has led to an extension of inequalities in the value chain. The consequences of this have been particularly evident during the global pandemic (50), with existing trends for cost-saving and flexibility in the supply chain leading to millions of people lacking decent work, social protection, and secure income. The International Labour Organisation (ILO) predicted that 1.6 billion employees in the informal economy would encounter serious consequences for their livelihood during the pandemic (50).

The uneven distribution of value in terms of income can be illustrated by the vast differences of wages amongst employees and returns to shareholders. The differences in the mechanisms for distribution of value continuously reproduce inequality in society and across borders, through the steady compounding of capital gains, which require no additional investment of time or resources. Piketty argues that given the rate of return on capital is higher than the rate of growth and the rate of return of labour, the system facilitates continuously unequal and unsustainable value distribution. The richest part of the population sits on capital and assets and are in the position to continue to invest and grow their wealth, whereas a worker without large amounts of capital only have their labour to produce and capture wealth. In America, the top 10% wealthiest people own 89% of all the US stocks (51).

While historically, organised labour within relatively closed economies were able to demand improved conditions, globalisation and the gig economy has seen these gains eroded over time. However, arguably, the historical adversarial system of capital versus labour was not sustainable either, as while mechanisms existed to more fairly distribute gains between workers and investors, it did not focus on long term value creation in line with the demands of a sustainable economy, and was primarily adversarial in nature (52).

Three-fourths of the decrease in labor share in the United States since 1947 has come since 2000.

Labor share of nonfarm business sector,[1] total compensation share of gross value added, %



Source: McKinsey Global Institute, 2019

CASE STUDY: UNEQUAL VALUE DISTRIBUTION AS DOMINOS SQUEEZES FRANCHISEES

A Fairfax Media investigation found widespread underpayment of wages and exploitation of migrant workers. Franchisees were told to keep labour costs below 27 percent of sales. Some workers were found to get paid as little as $10 per hour. Meanwhile, Domino's CEO Don Meij topped the list of the highest paid chief executives in Australia in 2017, with a salary of nearly $37 million. Moreover, the investigation uncovered illegal sales of sponsorships for migrant workers, requiring them to pay up to $150,000 for the work visas (53).

The pressure to keep labour costs down meant that if the sales were low one week, franchisees were pressured to find savings, with some choosing to doctor the system and deduct hours already worked by staff to meet the goal resulting in widespread and systemic underpayments.

Domino's business model is not based on profit for the franchisees. Instead, it is driven by growing sales of cheap pizzas, with head office benefiting by taking a royalty from every sale. While Dominos' business model delivers value to customers through cheap pizzas, its franchise model resulted in systemic pressures which breached the rights of employees.

3.6 OPERATIONAL EFFICIENCY AS SUSTAINABILITY STRATEGY

As the need to act upon sustainability issues has gained global momentum, businesses have increasingly focused on reducing their environmentally and socially harmful impact (54). The effectiveness of sustainability strategies are, however, often questionable, as businesses tend to tackle the operational and supply side of their business alone (38). This is often through technological solutions such as renewable energy, energy efficiency, and recycling.

While these are essential for transitioning towards a sustainable business model, they are not enough. Such measures fail to tackle unsustainable practices embedded in the core of the contemporary business model (55). Moreover, from a corporate perspective, sustainability is often defined as balancing the social, environmental, and economic aspects, which from an ecological economics perspective represents weak sustainability, as the economy is dependent on the society and the society is dependent on the environment.

While some businesses are shifting towards a more sustainable approach on the supply side of their operations, there is a need to go beyond this and also tackle the demand side; a sufficiency-driven business model (38). If the business model does not take action to moderate the demand from a consumer perspective, the increased efficiency in a sustainable business model can paradoxically result in increased unsustainable consumption.

Ioannou and Serafeim utilise Michael Porter's strategy theory to illustrate the limitations of current corporate sustainability practices, as well as the opportunities to go beyond and integrate sustainability into the core (56). This theory is based on distinguishing between 'operational efficiency' and 'strategic differentiation'. When put into a sustainability perspective, operational efficiency refers to practices that optimise a business's operations only. Utilising sustainability as a strategic differentiation, on the other hand, refers to integrating sustainability into the core of a business model to drive innovation and improvement through the way in which the business delivers solutions.

According to Ioannou and Serafeim, corporate responses to sustainability issues are often built on operational

efficiency only. The findings are based on an analysis of ESG data from 2012-2017 for 3,800 companies (56). Rather than a competitive advantage, they argue further that this will become the minimum standard and will be expected of all corporations. The findings in the study suggest that corporations should look beyond operational efficiency and utilise sustainability to drive strategic differentiation, by making changes in the core of their business model. Even though there has been an increased focus on sustainability amongst companies since the analysis used in this study, the failure to incorporate sustainability into the core of the business model, by tackling the demand side of their value chain and being agnostic about continuous growth and short-term profits, is still evident.

CASE STUDY: H&M OPERATIONAL EFFICIENCY OR GREENWASHING?

H&M's 2020 Sustainability Performance Report states that it seeks to become a circular business by 2040. In attempts to prevent garments from ending up in landfill, H&M implemented a garment collecting program claiming that 50-60 percent of textiles are sorted for re-use, 35-45 percent are recycled and 3-7 percent are burned as waste-to-energy (57).

However, H&M's business model still relies on volume growth. Consequently, its sustainability ambitions have been countered by claims of greenwashing due to a continued commitment to fast fashion, resulting in the large scale production of garments and exploitation of workers hidden within opaque supply chains.

A shift to a circular business model is tenuous when one of the pillars of circularity is to reduce production and consequently, consumption. These issues cannot be addressed unless the company also considers the demand side, to moderate the demand from the consumer to actively reduce over consumption.

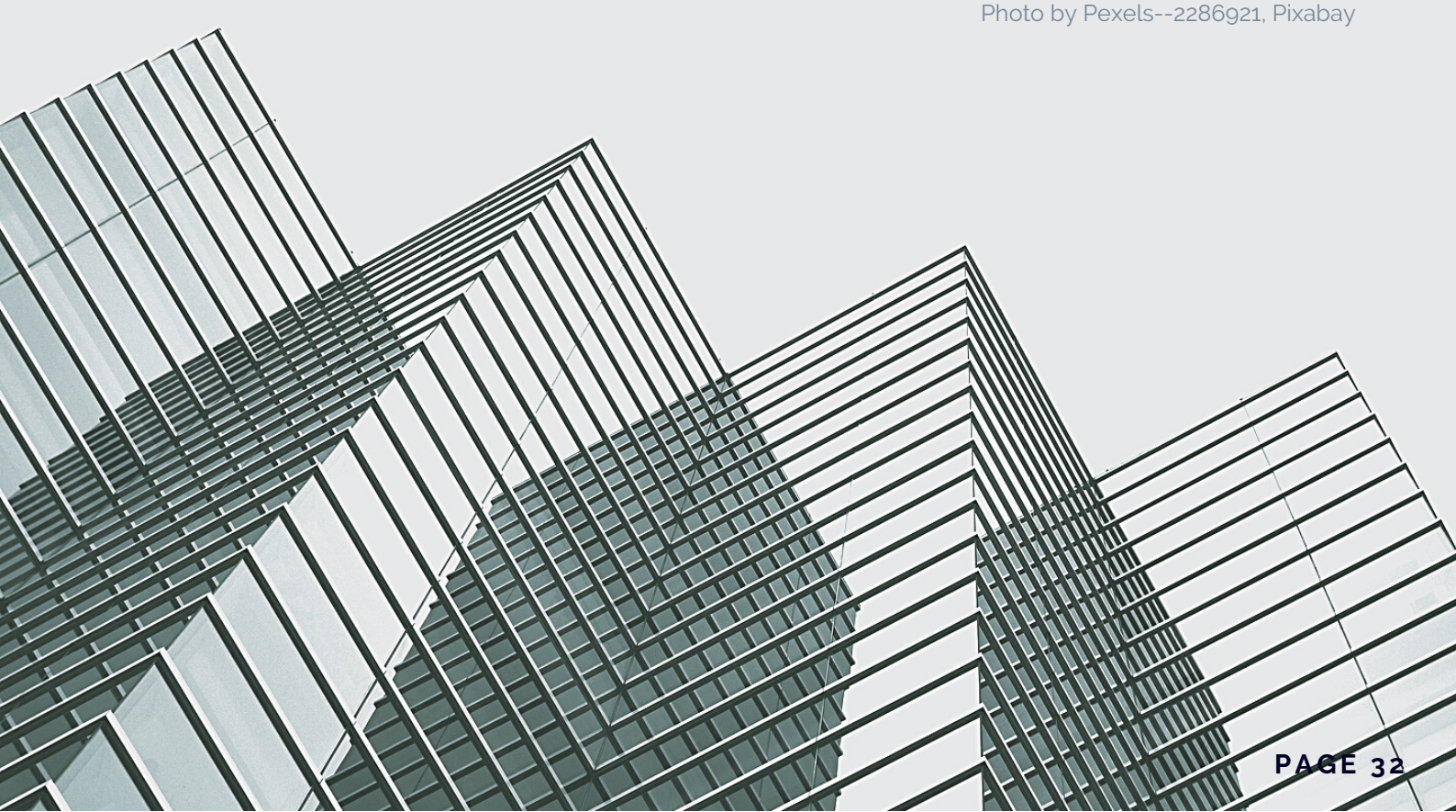
4 HOW DO BUSINESS MODELS NEED TO CHANGE TO THRIVE IN A SUSTAINABLE ECONOMY?

4.1 INTRODUCTION

Business can be an important contributor to achieving and maintaining a sustainable economy. To do so, business models must evolve in a way that allows them to thrive in such economy. As outlined in the previous section, current business model characteristics are fundamentally misaligned with the principles of Doughnut Economics. However, there is limited research on how business models must change. This section explores various theories, frameworks, and best practice case studies, to identify the characteristics essential to those business models most likely to thrive in a sustainable economy.

This section will start by explaining the frameworks that have been used to conceptualise and connect sustainable business model characteristics to the Doughnut Economics model. It will then present the five elemental parts a sustainable business model needs to support and thrive within a sustainable economy.

Photo by Pexels--2286921, Pixabay



THE BUSINESS MODEL ASSESSMENT FRAMEWORK

Doughnut Economics is primarily used as a framework to guide the economy in a holistic manner. Raworth has however, identified five traits that need to be considered by firms operating in alignment with the Doughnut (58):

1) THE BUSINESS' PURPOSE

- Does the business have a purpose which seeks to create social and/or environmental value, or a narrow financial one?

2) GOVERNANCE

- How is the company governed?
- What metrics are used to assess business performance?
- Are the main indicators based on market share and profit margins?
- How does the company assess environmental and social impact?
- And how is this balanced with financial gains?

3) NETWORK

- Who are the company's partners, suppliers, and customers?
- Are they aligned with the business' purpose and values?
- Are they working together with their network to create sustainable change?

4) OWNERSHIP

- Is the company owned by stock market participants where the main objective is to achieve a return on investment?
- Or is the company owned by its employees, or responsible stewards?

5) QUALITY OF FINANCE

- What are the goals of the funders?
- Do they have social and or environmental objectives, or are they solely looking for fast and high financial returns?

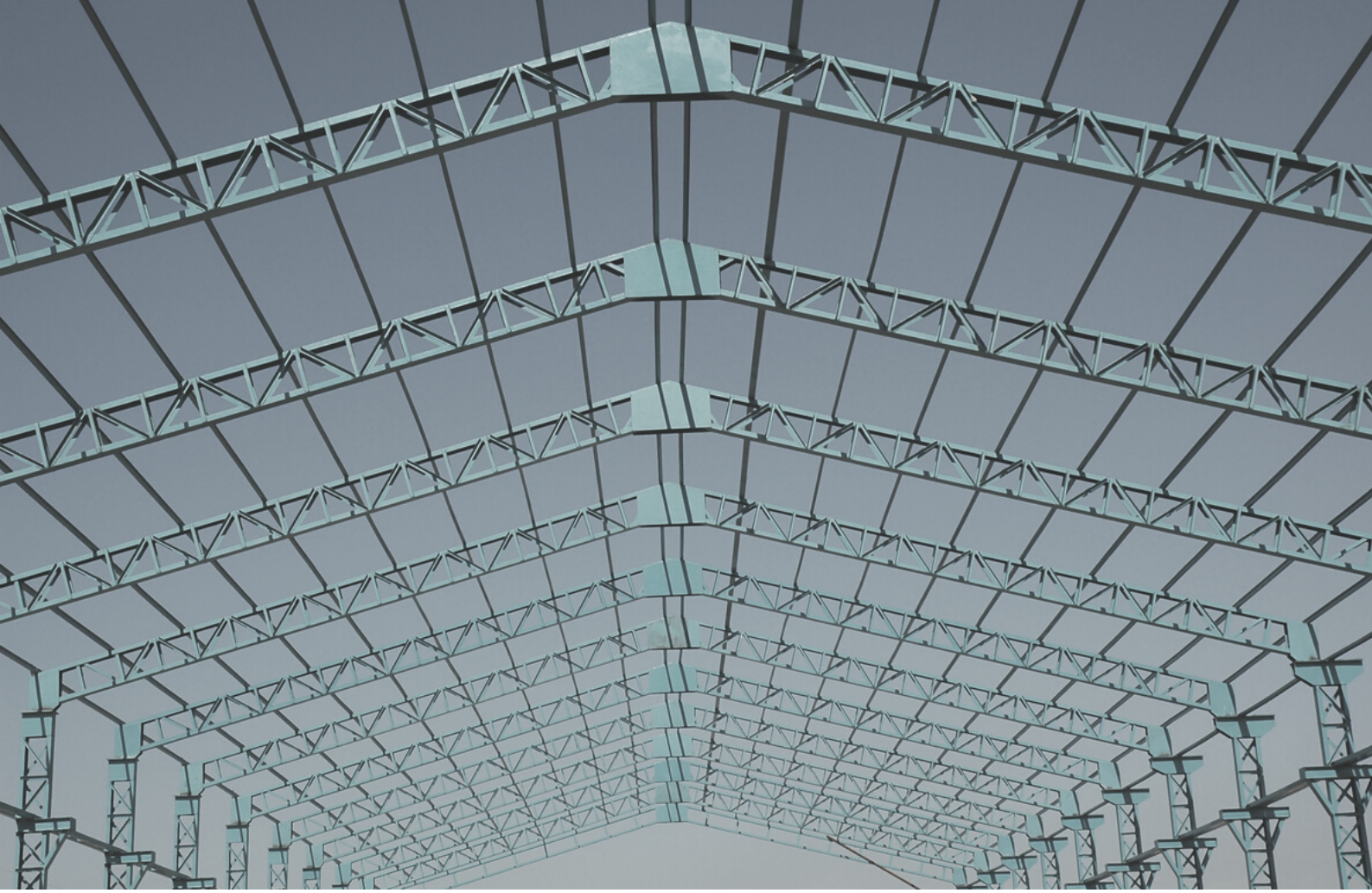


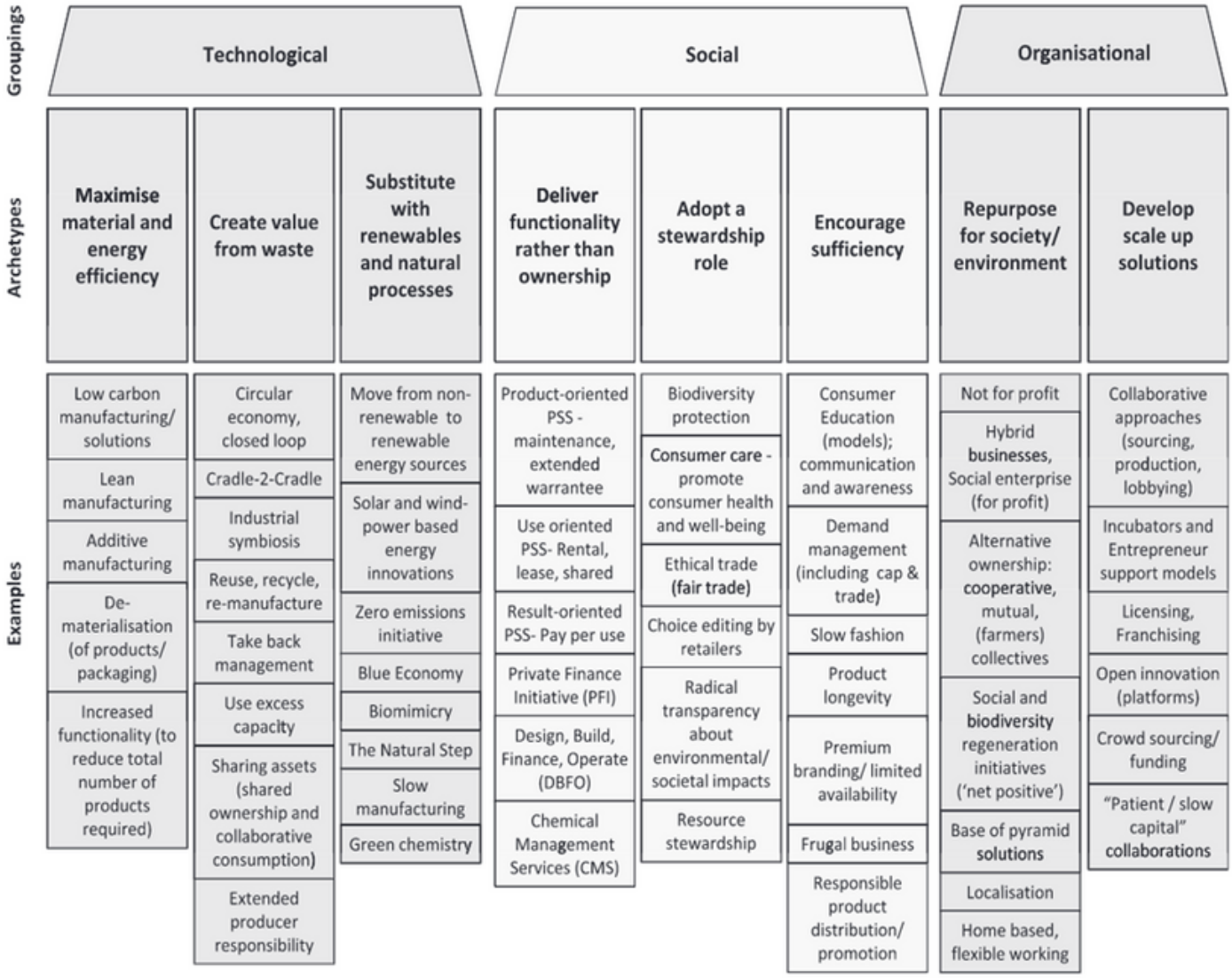
Photo by MG, Getty Images

These five traits provide the foundations from which a business can be organised to support the Doughnut economy, and from which its performance can be measured. Moreover, Raworth identifies two additional goals of a sustainable economy as being regenerative and distributive (6).

Over several decades, various models and approaches have been developed to address the social responsibility and sustainability of business. Nancy Bocken and others in the ecological economics literature, have identified eight sustainable business model 'archetypes' which represent widely discussed and acknowledged characteristics of a sustainable business model (59, 60).

The archetype examples in Figure 9 address the essential characteristics of a sustainable business model, from how the products are designed and delivered, to the organisation's ownership and purpose. However, the theory does not emphasise the need to embed several of the archetype's characteristics and moreover, fails to recognise the need to encompass sustainable characteristics throughout the entire business model, as will be discussed in this section of the report (59).

FIGURE 9: THE SUSTAINABLE BUSINESS MODEL ARCHETYPES (60)



By combining the five traits and two goals of Doughnut Economics outlined above, and the eight sustainable business model archetypes, a picture begins to form for what is required for a business model to thrive in a sustainable economy. Figure 10 illustrates a mapping of the different traits, goals and archetypes and how they connect. Based on an analysis of the two different frameworks, five foundational areas have been identified: 1. Purpose, 2. Organisation, 3. Circular and regenerative production, 4. Delivery of product or solution, and 5. Impact. These are each considered below.

FIGURE 10: MAPPING THE CHARACTERISTICS FOR A SUSTAINABLE BUSINESS MODEL WITHIN A SUSTAINABLE ECONOMY

Grouping	SMB archetypes (Bocken et al., 2014)	SMB traits (Doughnut Economics Action Lab, 2020)					Goals (Raworth, 2017)	
		Purpose & drivers	Governance	Networks	Ownership	Finance	Regenerative & circular	Distributive
Technological	Maximise material and energy efficiency							
	Create value from waste							
	Substitute with renewables and natural processes							
Social	Deliver functionality rather than ownership							
	Adopt a stewardship role							
	Encourage sufficiency							
Organisational	Repurpose for society/environment							
	Develop scale up solutions							

THE FIVE CHARACTERISTICS OF SUSTAINABLE BUSINESS MODEL

1) PURPOSE

i. A sustainable business must have a purpose beyond making a profit,

ii. With boards and management teams adopting a stewardship mindset and role in creating social and/or natural value alongside sustainable financial returns.

2) ORGANISATION

i. A sustainable business' ownership structure should recognise how it effects value distribution in the supply chain to ensure decent work and more equal capture of value throughout the value chain.

ii. Business owners and management must exercise a long term mindset for organising and investing in the business for long term value creation.

iii. A sustainable business is dependent on a network with an aligned perception of sustainability, to ensure sustainable practices across its value chain, from suppliers and partners, to customers.

iv. Sustainable business need to ensure corporate governance supports sustainable operations through environmental, social and governance (ESG) practices, reporting, networks and cooperation within and across industries.

3) CIRCULAR AND REGENERATIVE PRODUCTION

i. A sustainable business should aim for the full life cycle of its products or services to be regenerative, circular, efficient and non-polluting.

4) DELIVERY OF PRODUCT OR SOLUTIONS

i. The businesses should encourage sufficiency, tackling the demand of their products with models that do not rely on continuous growth in material throughput or unnecessary and unsustainable consumption.

5) IMPACT

i. A sustainable business should continuously assess and measure its social and environmental impacts to ensure that they are delivering on the business's purpose and values.

These five characteristics will now each be considered in turn, including identification of case organisations to demonstrate how these characteristics might be applied in practice, as well as questions that need to be considered in their application.

FIGURE 7: THE FIVE OVERARCHING AREAS BUSINESSES NEED TO CONSIDER TRANSITIONING TOWARDS A SUSTAINABLE BUSINESS MODEL

PURPOSE	ORGANISATION	CIRCULAR AND REGENERATIVE PRODUCTION	DELIVERY OF PRODUCTS/SERVICES
1) Business purpose and main drivers	1) Ownership structure 2) Value distribution in the supply chain 3) Networks 4) Operational timeframes 5) Governance and indicators	1) Energy and resource efficiency 2) Creating value from waste 3) Renewable and natural processes	1) Encourage sufficiency 2) Designing for circularity 3) Functionality rather than ownership 4) Digitisation

IMPACT

1) Total and evolving impact
2) Positive and negative externalities

4.2 PURPOSE

Business purpose and main drivers

Raworth identifies a corporations' purpose as a key element in the Doughnut. From a sustainable business model perspective, a business' purpose needs to go beyond short-term profit maximisation, to the creation of sustainable value and positive impact (59). Ultimately, there is a need to contribute towards the foundations of society, ensuring that no one is left falling short of life's essentials, and/or create environmental value through solutions that limit or reduce harm on the environment. In all cases, it is vital to ensure no significant harm to any other social and environmental aspects.

Indicators of social foundation as identified in the Doughnut are food,

water, education, income and work, peace and justice, political voice, social equality, gender equality, housing, networks, and energy. The definition of sustainable value is relative to the corporation's stakeholders, however, it is often defined through creating environmental or social value. While some stakeholders may still prioritise financial value, the purpose and stewardship of the organisation as a whole should ensure that satisfying these stakeholders does not have a negative social or environmental impact. Still, it is important to acknowledge that not all companies need to have explicit purpose as defined by creating social or environmental impact. A company can still be an important actor in contributing or facilitating towards the greater good.

CASE STUDY: B CORPORATIONS

There are over 5,000 organisations across 79 countries that are certified B Corporations (B Corp). B Corps are purpose-driven and seek to benefit all stakeholders including workers, customers, suppliers, and the environment. B Corps are certified across social and environmental performance, transparency, and legal accountability. To become a B Corp a company needs to demonstrate that their purpose is contributing towards solving the world's challenges, like pollution and inequality, and each business's social and environmental impact is evaluated. B Corps outperform non-certified organisations on environmental and social outcomes. For example, B Corps are 87% more likely to monitor, record, and set scope 1 and 2 greenhouse gas emissions reduction targets, compared with ordinary businesses. B Corps are 9% more diverse than ordinary businesses. B Corps are changing the way for-profit businesses are structured and operate by explicitly recognising a broader purpose than profitability for shareholders (61).

Bocken identifies two characteristics that relate to the purpose of a corporation: adopting a stewardship role; and, repurposing for society/environment. Adopting a stewardship role requires creating and delivering social and/or environmental value rather than only financial gains. Repurposing for society/environment requires delivering products and services that intend to genuinely deliver value to the stakeholders, to ensure their long term health and well-being.

Traditionally, the most common business models that encompass these traits may be the non-for-profit or social business models (62). However, models like Benefit Corporations and B-Corps embed social and environmental responsibilities into companies' governing documents, including large B-Corp organisations like Danone, Natura and Ben and Jerry's.

A Re-generate report from 2020 on the case for purpose-driven business, illustrates that the public want corporations to take a greater responsibility for tackling social and environmental issues (97). There are great opportunities for businesses to contribute towards the social foundation in the Doughnut.

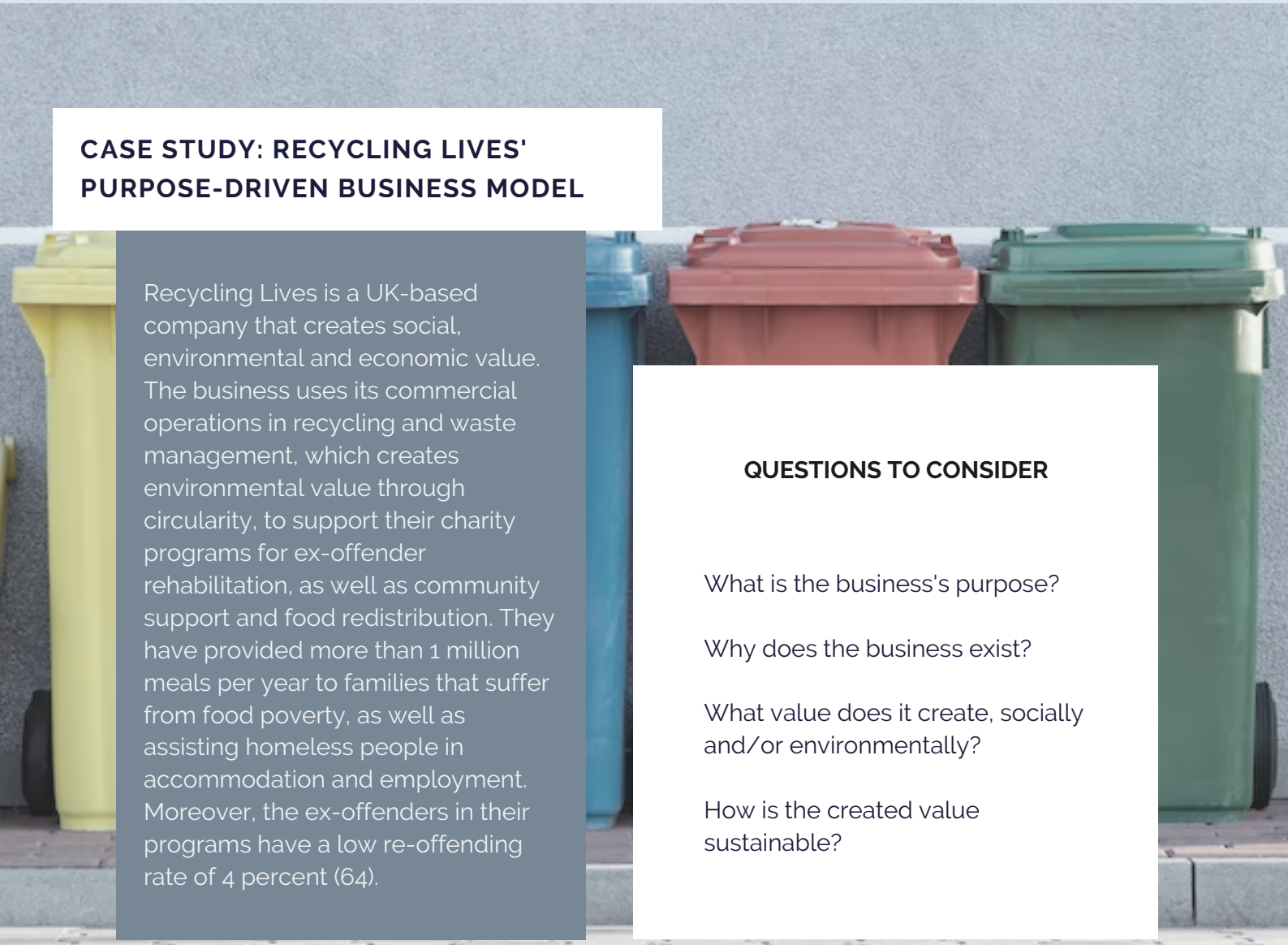
CASE STUDY: FAIRBNB.COOP

Fairbnb.coop aims to support the local communities of their hosts by offering affordable short-term holiday rentals. Collectively owned and purpose-driven, the organisation dedicates 50% of their platform fee to operating costs and the other 50% to fund a project of the customer's choice in their holiday destination (63). The projects are voted on by locals and can include food coops, playgrounds, green projects and community cafes.

Fairbnb.coop evolved in response to a short-term holiday rental market that negatively impacts locals. Impacts include reducing the amount of long-term rental properties, and increasing rent and property prices, which places financial stress on locals and can price people out of their local area. Cities including New York, Paris and Barcelona have regulations in place to avoid the negative effects of short-term holiday rentals. While cities face challenges to enforce short-term rental laws, Fairbnb.coop works with local authorities to ensure that its hosts are complying with the local law. Working local communities, Fairbnb.coop seeks to promote sustainable tourism by reducing the impact of gentrification and redistributing profit within the communities it operates (63).

Businesses have the power, ability, and networks to create the positive and necessary transformation that society needs. Moreover, businesses that are driven by a greater purpose are increasingly shown to be more resilient and financially successful.

The greatest challenge is, however, to create the necessary shift away from a singular focus on profit and growth, and towards social and environmental value creation. The economy and the markets in which corporations today operate are dominated by the need to maximise short-term financial value. Monetary values, such as the GDP, stock prices and profits, are today the indicators used to measure development and success. This creates a perceived barrier to becoming a purpose-driven business. Still, as illustrated in the case studies below, of companies that are driven by a greater purpose, such companies can also become commercially successful.



CASE STUDY: RECYCLING LIVES' PURPOSE-DRIVEN BUSINESS MODEL

Recycling Lives is a UK-based company that creates social, environmental and economic value. The business uses its commercial operations in recycling and waste management, which creates environmental value through circularity, to support their charity programs for ex-offender rehabilitation, as well as community support and food redistribution. They have provided more than 1 million meals per year to families that suffer from food poverty, as well as assisting homeless people in accommodation and employment. Moreover, the ex-offenders in their programs have a low re-offending rate of 4 percent (64).

QUESTIONS TO CONSIDER

What is the business's purpose?

Why does the business exist?

What value does it create, socially and/or environmentally?

How is the created value sustainable?

Photo by Pawel Czerwinski, Unsplash

4.3 ORGANISATION

The way in which a business is organised is fundamental for attaining sustainability across the business' operations. From the ownership structure, and how the business distributes value in its supply chain, to how the business networks, its time horizon, and how it manages its impacts, both positive and negative.

Ownership

Ownership plays a central role in business purpose, structure, and operations, as well as the distribution of value throughout supply chains. Current business purpose often evolves around satisfying shareholder needs, with a significant proportion of the value created by the business being captured by shareholders. Ultimately, it is key to have owners and/or investors that seek to create value beyond profit, and perform well in terms of multiple stakeholders and the environment.

While this is possible with market-based ownership structures like free-float public equities, alternative ownership-models also offer a means for achieving shared value. Examples include employee-owned and cooperative ownership structures (65). According to Project Equity, an organisation that helps businesses transition to employee-ownership models, employee-owned companies have the ability to increase job quality and creation, as well as contribute to local investments (66). Empirical evidence also points to greater job stability, as well as reducing income inequality (67). When employee-owned corporations achieve a 5-10% scale in a local economy, social and economic well-being levels increase (66).

Photo by Ekkasit919, Getty Images

QUESTIONS TO CONSIDER

What is the ownership model?

What are the owners' main objectives and how might that affect sustainability?

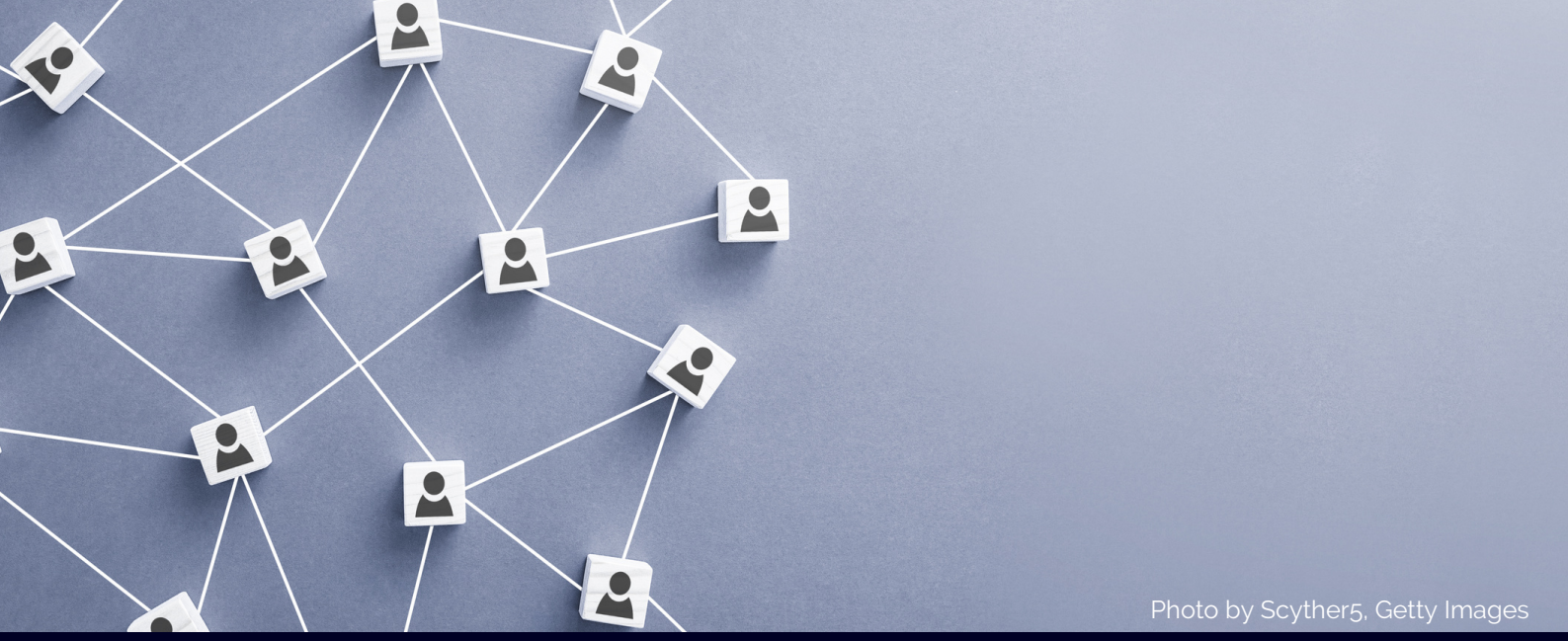


Photo by Scyther5, Getty Images

CASE STUDY: STEWARD-OWNERSHIP MODEL

Providing an alternative to shareholder owner business models, the steward-ownership model embeds values of self-governance and ensuring profits serve the organisation's purpose rather than shareholders (68). Steward-ownership models can be structured as trusts, foundations, or employee-owned companies and include companies like Bosch, Zeiss, Novo Nordisk and Carlsberg (69). A company is controlled and governed by the stakeholders who are actively engaged in the company's mission. The ownership cannot be sold and bought, instead it is passed onto other stewards engaged in the company like employees or representatives of related stakeholders. Stewards have a responsibility to further the organisation's mission and consider all stakeholders. While founders and investors still receive a fair return that is capped, profits are reinvested, shared with stakeholders or donated, ensuring that profits are a means to further the company's purpose.

CASE STUDY: MONDRAGÓN COOPERATIVE CORPORATION EMPLOYEE-OWNED COMPANY

Mondragón Corporation constitutes ninety-six cooperatives and an organisational structure that enables employees to also be partners in the business (71). Mondragón is the leading business in Basque Country and ranks tenth in Spain. Offering employees a stake in the business shifts the organisation's purpose from maximising shareholder returns to building a profitable business that prioritises its employees. As co-owners, employees enjoy equal sharing of profits on a proportionate basis and an equal vote in the governance of the organisation. To reduce exploitative and unequal distribution of value within the supply chain, Mondragón has capped the gap between the highest and lowest paid employees to a 1:9 ratio (72). Mondragón uses democratic methods in its corporate organisation, and its aims are employment, the personal and professional advancement of workers, and the development of its community.

Value distribution in the supply chain

The distribution and capture of value, as well as environmental protection, throughout the supply chain is another key area of a sustainable business model. To fit into a sustainable economy, the business model needs to be inclusive and distributive by design (73). This means the value created needs to be distributed more equitably to bring everyone above the social foundation. Value does not only refer to income, but also power, wealth, and time. To make income more equally distributed, arguments for a minimum living wage as well as a maximum wage have been discussed.

A vital part of a distributive supply chain is to ensure decent jobs for workers. This includes ensuring job security, equality, health, and well-being for workers throughout the supply chain (50). Creating more distributive supply chains that provide decent work and environmental protection present opportunities. It can lead to increased employee productivity and reduction of staff turnover (50). Moreover, there are increasing regulations and expectations in terms of corporations' responsibility throughout the value chain, for example regarding eradicating modern slavery.

QUESTION TO CONSIDER

How is the value distributed and captured throughout the supply chain?

Photo by Jacques Dillies, Unsplash

By ensuring equitable value distribution and environmental protection, companies will have a more resilient supply chain and enhanced license to operate. It can also lead to greater customer loyalty, which in turn provides a competitive advantage.

There are, however, vital challenges related to systemic complexity and lack of capacity (50). The company might not have the capacity to understand and respond to its negative impact on its workers, and there might be systemic complexities where the solution does not lie with corporations directly. Moreover, common business priorities of cost reduction and profit growth can come into conflict with providing decent work, particularly in the short-term and via highly disintermediated supply chains, as well as pressure from investors to reduce costs and increase profits.

Lack of environmental and social policies in supplier host countries can also pose challenges as there is often a lack of control and transparency. Still, some of the challenges linked to lack of control, transparency and traceability in the supply chain, can be lessened by the implementation of various technologies. For example, satellite monitoring to detect deforestation, greater price transparency, access to grievance mechanisms through access to the internet and mobile phones, and blockchains which can enable secure and reliable traceability and transparency.

CASE STUDY: NATURA

Natura & Co, Brazil's largest cosmetics company, is driven by both environmental and social purpose. Natura's mission is to create and sell products and services that promote the harmonious relationship of the individual with oneself, with others and with nature.

Natura's business model includes a direct selling consultant model which empowers more than two million women to flexibly run their own small businesses. Natura provides training and tools to support its distributed sales force, including through the COVID-19 pandemic, to enable continued work for its consultants (74).

For their supply chain, Natura works with more than 4,300 families in more than thirty-five local communities in the Amazon region to sustainably source forest products, which contributes towards the economic development in the region and discourages deforestation. The company is also focused on empowering women, and the latest update shows a ratio of 38% women in management roles, with the goal of reaching 50% (75).

Networks

A company's network includes different actors along the value chain, such as its customers, partners, regulators, and suppliers. It is important that a company operates with, and for, actors that align with the company's purpose and values. This includes ensuring that suppliers have sound environmental and social policies and practices.

Moreover, to take part in networks that cooperate to address sustainability issues, is elemental to overcome several industry barriers (76). Such networks can often be built on actors across various industries, sectors, and systems, from both public and private institutions. The network approach is an important driver that can push business ecosystems in the right direction, enabling them to develop solutions to sustainability issues collectively. Such networks require collaboration to overcome barriers for decarbonising hard-to-abate industries and create systems that can support circularity, as well as push towards creating systemic changes to better enable and ensure the creation of decent work throughout the supply chain. Ellen MacArthur's Circular Economy 100 (CE100) is an example of a network of various actors that come together to facilitate initiatives and projects to drive solutions towards a more circular economy (9).

The current market in which corporations operate is, however, heavily dependent on competition. This can create barriers for networks in sharing solutions, and hence reduced opportunities to benefit from new solutions, technologies, and innovation that could have provided increased value for the commons. Collaboration, alliances and sharing of innovation and knowledge will be fundamental to drive the necessary shifts. Tesla's patent sharing is an example of this. The electrical vehicle car company, Tesla, decided to share the patents on their technologies openly. This enabled other companies to copy their technologies, but also benefitting the commons and Tesla by driving infrastructure and knowledge building in the area (77).

Political lobbying and advocacy is another important network which has been undermined by narrow company or industry objectives which have, for example, supported delayed action on climate change or minimised corporate taxes. However, a business model with sustainable business characteristics would be aligned with and naturally support policies which protect and enhance environmental and social systems.

QUESTIONS TO CONSIDER

Who are the business' key stakeholders?

What are their values, and do they align with those of the business?

How is the company partnering with other actors to tackle challenges and facilitating the necessary ecosystem?

CASE STUDY: ELLEN MACARTHUR CIRCULAR ECONOMY NETWORK 3D PRINTING AND REPAIR PARTS

In a pilot project, the HP, Teleplan, IKEA, Philips, and iFixit collaboration called Co.Project, aimed to understand how 3D printing can be used in a circular economy, and how to better manage the product lifecycle by preventing products that need repair from ending up in landfill.

The solution needed to account for the diverse and everchanging catalogues of products that technology and furniture companies have. One option could be to produce spare parts in bulk, but there's no way to predict future need, to know which parts to make and the amount and cost of storing the inventory. 3D printing is an attractive solution because it uses digital files that can be printed as they are needed which reduces the need to have a stockpile of inventory.

Using a 3D printer, HP and Telepan worked together to create spare parts for the HP OfficeJet printer. At the testing stage, the products did not meet the quality standards, underscoring the broader circular design problem of creating a circular innovation for a product with a linear design. In response, Co.Project decided to reach out to their network and crowd source the solutions by launching the Dare to Repair contest which challenged people to invent and design spare parts for real-world problems with everyday products (78).

Operational timeframes

The focus on short-term gains of investments represents a key challenge for corporations to perform well on sustainability. Even corporations with a well-integrated sustainability focus in their operations recognise that the pressure from short-term gains inhibit investments into sustainability-related activities, despite the potential long term value it might create (33). For a corporation to attain a sustainable day-to-day practice and make sustainability a main driver, there is a need to shift towards a long term outlook where environmental, social and economic costs and benefits are considered.

Moreover, a study (79) from McKinsey Global Institute found that companies which have operated with a long term focus outperformed their industry competitors both operationally and financially. This included revenue, employee income and job creation. In addition, operating with a long term horizon enables companies to identify and create positive environmental and social outcomes more easily.

The current investment industry is, however, heavily focused on short-term gains, and a company's success and investment attractiveness are often linked to their short-term achievements. Despite gaining increasing acceptance, shifting investment time horizons remains an urgent and unmet challenge (37).

QUESTION TO CONSIDER

Does the business operate with short or long term objectives and what are the effects on sustainability?

CASE STUDY: TATA LONG OPERATIONS TIME FRAME

The continued success of the Tata Group for over 150 years is thought to be a company culture that keeps long term sustainability in mind even in short-term decisions. Tata is committed to a long term operational time frame that is embedded in the company's core purpose, which is to improve the quality of life of the communities the company serves globally, through long term stakeholder value creation.

Tata seeks to serve employees, customers, society as well as shareholders. This purpose was embedded into the company by Jamsetji Tata, the founder of what would become the Tata Group. Jamsetji pioneered worker welfare initiatives including a pension fund in 1886, accident compensation in 1895, shorter working hours, crèche for mothers and gratuity (80). Jehangir Ratanji Dadabhoy Tata, known as JRD, the great-grandson of Jamsetji led the business for 50 years during which his stewardship contributed to India's development through establishing arts, medical and scientific institutions.

JRD championed entrepreneurship, evident in his passion for aviation which inspired him to start Tata Aviation Service, India's first airline, and the forerunner to Tata Airlines and Air India. Valuing entrepreneurial leadership continues today as Tata invests in the long term success of their staff through training and development. A long term strategic focus has seen the business succeed without sacrificing its values and purpose, Tata now has 29 publicly listed enterprises that employ over 935,000 people and is worth $311 billion (81).

Photo by Djedj, Pixabay

Governance and indicators

The organisations' governance, and ESG reporting are also key elements for developing sustainable business practices (82, 83), not only to maintain effective oversight and control, but to honestly and transparently communicate sustainability performance to stakeholders. Sustainability reporting promotes accountability, especially when coupled with targets for improvement.

The Governance Institute of Australia defines corporate governance as "the system by which an organisation is controlled and operates, and the mechanisms by which it, and its people, are held to account."

QUESTIONS TO CONSIDER

How does the business govern its operations?

What frameworks are used to report on environmental, social and governance (ESG) practices?

Corporate governance is a significant focus for investors and has evolved to include the oversight of measurement and reporting on a company's sustainability performance and impacts. To ensure a business' actions are aligned with a sustainable economy, corporate governance must recognise and respect the interests and rights of all its stakeholders and the environment.

The scope and quality of corporate governance varies widely but by and large continues to focus on shareholders above other stakeholders. While in general, company law requires directors to act in the interests of the company, this has historically been interpreted as meaning in the interests of shareholders. However, as the Integrated Reporting framework makes clear the success and therefore interests of a company are tied to a range of stakeholders, particularly over the long term. Similarly, given the existential threats posed by issues like climate change and biodiversity loss, a company's long term interests also depend on averting these threats while successfully adapting to the social and economic structures which emerge in response to these issues.

Consequently, modern company directors must balance a range of interests and objectives that can best be satisfied by positioning the company to thrive within a sustainable economy.

The vastly complex supply chain networks that have emerged as a result of globalisation and outsourcing is a major challenge in exercising modern governance. Moreover, the last decade has seen an increase in governmental regulations on social and environmental reporting. From the EU's Non-Financial Reporting Directive in 2014 to the proposed Corporate Sustainability Reporting Directive in 2021, which include comprehensive mandatory corporate reporting of sustainability data, strategies, and due diligence (84). These standards extend to the United Nations where the Guiding Principles on Business and Human Rights is set to become a legally binding instrument to ensure due diligence through a Treaty on Business and Human Rights (third revised draft proposed in 2021) (85).

Various frameworks exist to support companies in improving governance and reporting practices. Three complementary frameworks are the Integrated Reporting framework, the Sustainability Accounting Standards Board and the Global Reporting Initiative. Other issue specific frameworks like the Taskforce on Climate-Related Financial Disclosures (TCFD) and industry specific frameworks like those developed by the International Council on Mining and Metals can further supplement these standards (86).

Photo by Relif, Getty Images

However, none of these frameworks currently focus on or seeks to measure what a company needs to do to align with the Doughnut Economy, and so lack essential context. Even the TCFD frames the issues through the lens of risks to the company, including through the use of various scenarios, rather than placing a positive obligation for the company to act in accordance with a safe climate outcome.

In addition to corporate reporting standards, global goals like the United Nations Sustainable Development Goals (SDGs) and the Paris Agreement, are often used as a guide on what impact areas businesses should focus on and measure, both to understand which areas the company has an adverse impact on, along with areas it can have a positive impact.

COMPLEMENTARY SUSTAINABILITY FRAMEWORKS

Integrated Reporting (IR) Framework: the IR Framework was developed by the International Integrated Reporting Council (IIRC) in 2013, to bring financial and sustainability reporting together. IR offers a different way for companies to think about and report on their business model and value creation story by considering the effect it has on six "capitals"; financial, manufactured, intellectual, human, social and relationships, and natural capital (87).

Sustainable Accounting Standards Board (SASB): SASB was founded in 2011 to develop industry specific reporting standards with a focus on financial materiality. In its standards SASB identifies the issues and reporting metrics across 77 industries along with providing technical guidance (88).

Global Reporting Initiative (GRI): the GRI was founded in 1994 and, unlike SASB's industry focus, provides functional and issue focused standards with a broader stakeholder and sustainable development focus (89).

Used together these standards provide a company with a view of its business model through industry, financial, issue and sustainable development perspectives. In 2020 IIRC and SASB merged to create the Value Reporting Foundation and with the GRI, CDP and Climate Disclosure Standards Board launched a shared vision for sustainability reporting.

4.4 CIRCULAR AND REGENERATIVE PRODUCTION

Businesses should design for circularity throughout a product's lifetime. This includes both the production process, using recycled resources, and designing for circular products by using recyclable and reusable materials and solutions. In addition, businesses should ensure use of renewable, clean energy and energy efficiency throughout the supply chain. These areas have already gained momentum from both governmental and corporate bodies, and they will be vital to achieve sustainable production systems and infrastructures. It is key to not only focus on the company's own operations, but its entire value chain, when addressing these areas. Addressing all activities linked to creating and delivering a product or service, from raw material extraction and manufacturing, to distributing and even using the product or service.

Bocken et al. distinguish between three different sustainable business model archetypes within the technological improvement sphere; maximise material and energy efficiency; create value from waste; and substitute with renewable and natural processes (60).

Energy and resource efficiency

The maximisation of material and energy efficiency refers to utilising fewer resources, and generating less waste and pollution than products and services that deliver comparable functionalities (60). By implementing energy and resource efficiency measures, a company not only reduces its material and energy use and waste, but it also reduces economic costs. Examples of this include the Lean manufacturing approach, which is a method that seeks to minimise material and energy waste.

Photo by Milena Trifonova, Unsplash

CASE STUDY: INFINEON DEMONSTRATING ENERGY AND RESOURCE EFFICIENCY

Infineon Technologies AG is a world leader in semiconductor solutions, developing energy efficient products with the goal to reduce human impact on the climate, and to increase the accessibility to Infineon's energy reducing technologies. To manage and evaluate resource efficiency, Infineon established IMPRES (Infineon Integrated Management Program for Environment, Energy, Safety and Health), a framework that integrates targets and processes relating to ecological sustainability as well as occupational safety and health protection (90). IMPRES has been certified with several DNV energy management standards, demonstrating a commitment to continuous improvement and sustainable business performance. After deducting its own footprint, products and solutions from Infineon helped reduce emissions by a net total of 70 million tons of CO_2 in 2020 (91). Furthermore, the company's energy reduction has resulted in operational cost savings of over €16 million.

Photo by Jenny Parkins, Climate Visuals

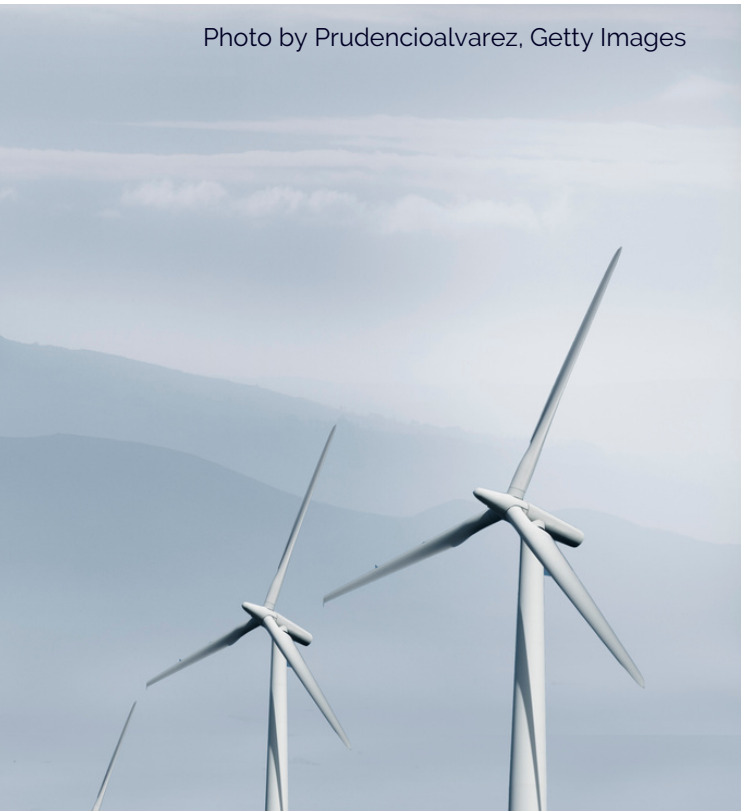
Creating value from waste

Creating value from waste, which is an element of a circular economy, is based on resources staying in industrial loops, either by being refurbished or recycled, or where waste from one production process becomes an input into another (60). Circularity reduces environmental and economic costs by reusing material. Examples of circularity in the production process include the collection and value adding to waste streams, establishing industrial ecology systems, and recycling initiatives.

CASE STUDY: TOMRA

Tomra manufacturers and operates a Clean Loop Recycling system that provides payment for returned containers made of plastic, aluminium and glass. Clean Loop Recycling is a process that ensures products are collected, recycled and repurposed. Operating globally, reverse vending machines provide an automated method for collecting, sorting and handling the return of used beverage containers for recycling or reuse. The technology scans the container barcode, identifies the material and ensures the container is empty, before the customer receives a refund. Reverse vending machines demonstrate return rates from 70% to almost 100% of sold beverages, recycling more than 35 billion cans and bottles annually (92).

Photo by Prudencioalvarez, Getty Images



Renewable and natural processes

Substituting with renewable and natural processes is based on reducing the use of non-renewable resources and man-made artificial production systems (60). In practice, this refers to the transition towards both renewable energy supplies as well as natural and renewable material usage, reducing the use of non-renewable/finite resources and synthetic waste going to landfill, as well as reducing emissions related to the burning of fossil fuels. Eliminating the use of non-renewable resources is an important factor in moving towards a circular production system.

From a business perspective, circular and regenerative practices are vital to reduce costs in operations and risk management. Corporations are dependent on resources, many of which are increasingly scarce. By implementing resource efficiency and renewable and natural processes within circular systems, companies can better manage resources. This needs to be done in a manner that is regenerative and circular, so that it can create value to society within the ecological ceiling.

Moreover, companies are increasingly expected to take responsibility for their pollution and waste. Globally, there has been an emergence of regulations involving company responsibility. Extended Producer Responsibility policies (94) are evident in both the EU and the US. It is a policy approach where the producers are given ongoing responsibility for the products they produce, including post-consumption. This indicates the importance of designing for circularity. The Directive on Single-Use Plastic in the EU is another example of policy interventions intended to drive the use of renewable and natural processes and circular solutions (95).

There are, however, some barriers to attaining circularity and regeneration. Even though the technological improvements often lead to cost efficiency in the long term, it can sometimes have a high upfront cost, especially in industries where the technology is not yet mature. However, a study by the World Economic Forum illustrates that most decarbonisation technologies can be implemented in the supply chain at a minimum cost (76). Moreover, even solutions in hard-to-abate industries show that the marginal extra cost per product is still low, normally between a 1-4% increase. In most cases collaboration across industries is needed to invest in and drive these innovations (76).

CASE STUDY: KLABIN FORESTRY PRACTICES RENEWABLE AND NATURAL PROCESSES

Klabin is Brazil's largest paper producer and exporter. Klabin have developed a forest management system which seeks to protect and promote biodiversity. Klabin's 'mosaic forest management system' plants pine and eucalyptus trees mixed with native trees. In between, ecological corridors are preserved to allow animals to transit. This practice helps to preserve fauna, flora, and water resources from the Atlantic Forest biome. In these preserved native forests, Klabin has also implemented a program that allows the company to grow and harvest non-timber products, such as medicinal plants (93).

QUESTIONS TO CONSIDER

How does the business produce its products/solutions? Consider both the business' operations and those of its suppliers

How does it promote efficiency in terms of energy and resource use?

How does it promote a circular production? Does it create value from waste?

How does it utilise renewable and natural processes?

4.5 DELIVERY OF PRODUCT/SOLUTION

The ways in which a company delivers its products or solutions is fundamental to its sustainability performance. This links back to the linear business model and growth-driven related sustainability issues. If a company seeks to maximise the consumption of their products in a linear manner, it will be hard to achieve sustainability (38). There is a need for corporations to go beyond their supply side and tackle the demand side of their business. This can be done by encouraging sufficiency and circularity, delivering functionality rather than ownership, and digitisation.

Sustainable delivery is heavily dependent on collaboration with partners, suppliers and the creation of adequate infrastructure. This relates to downstream activities such as product and service distribution and facilitating the necessary infrastructure for a circular user model.

Encourage sufficiency

Bocken and Short address the need to transform business models with the aim of maximising consumption to ones that encourage sufficiency through providing quality, long-lasting, and repairable products (38). Sufficiency refers to having enough to live a healthy and meaningful life, without excess. For a sustainable business model in the Doughnut Economy, to encourage sufficiency means that companies provide goods that enable society to meet the social foundation, without encouraging unsustainable consumption.

CASE STUDY: CITIZEN WOLF - ENCOURAGE SUFFICIENCY

Citizen Wolf, is a B-Corp certified T-shirt manufacturer that encourages sufficiency by offering free alterations and repairs for all T-shirts, emitting 48% less carbon dioxide than fast fashion. About 30% of the output in the fast fashion industry normally ends up in landfill. Citizen Wolf eliminates this by their 'made to order' strategy. Furthermore, Citizen Wolf is carbon negative by offsetting carbon emissions produced through the New Leaf Project, a Tasmanian biodiversity project that aims to rewild 27, 390 hectares of forest back to wildlife habitat (96).

Design for circularity

The way in which companies deliver their products/solutions is vital to attaining a circular production system. It might not be enough to design for recyclability, there is also a need to create a system that enables used or damaged products to get back in the loop, or become inputs into other processes. Thus, companies must facilitate consumer incentives as well as reverse logistics opportunities, or design products in a manner that enables convenient reuse, refurbishment and/or recyclability.

This is important for products that are delivered in a shared model, where the producer keeps ownership of the product, but also for consumer goods that might not fit into a shared model, such as shoes, clothes, cosmetics, etc. As in most of the value chain, suppliers and partners are vital allies in enabling this. Accordingly, it is also important that a company considers the social and environmental impact of its suppliers and partners.

As illustrated in Figure 11, goods that depend on finite resources should be designed with the following prioritisation depending on feasibility; 1. Design for durability by enabling maintenance and or delivering the good in a shared model for redistribution. 2. Design for refurbish and remanufacture opportunities when the good no longer serves it purpose. 3. Design for recyclability at the end of the good's lifetime (9).

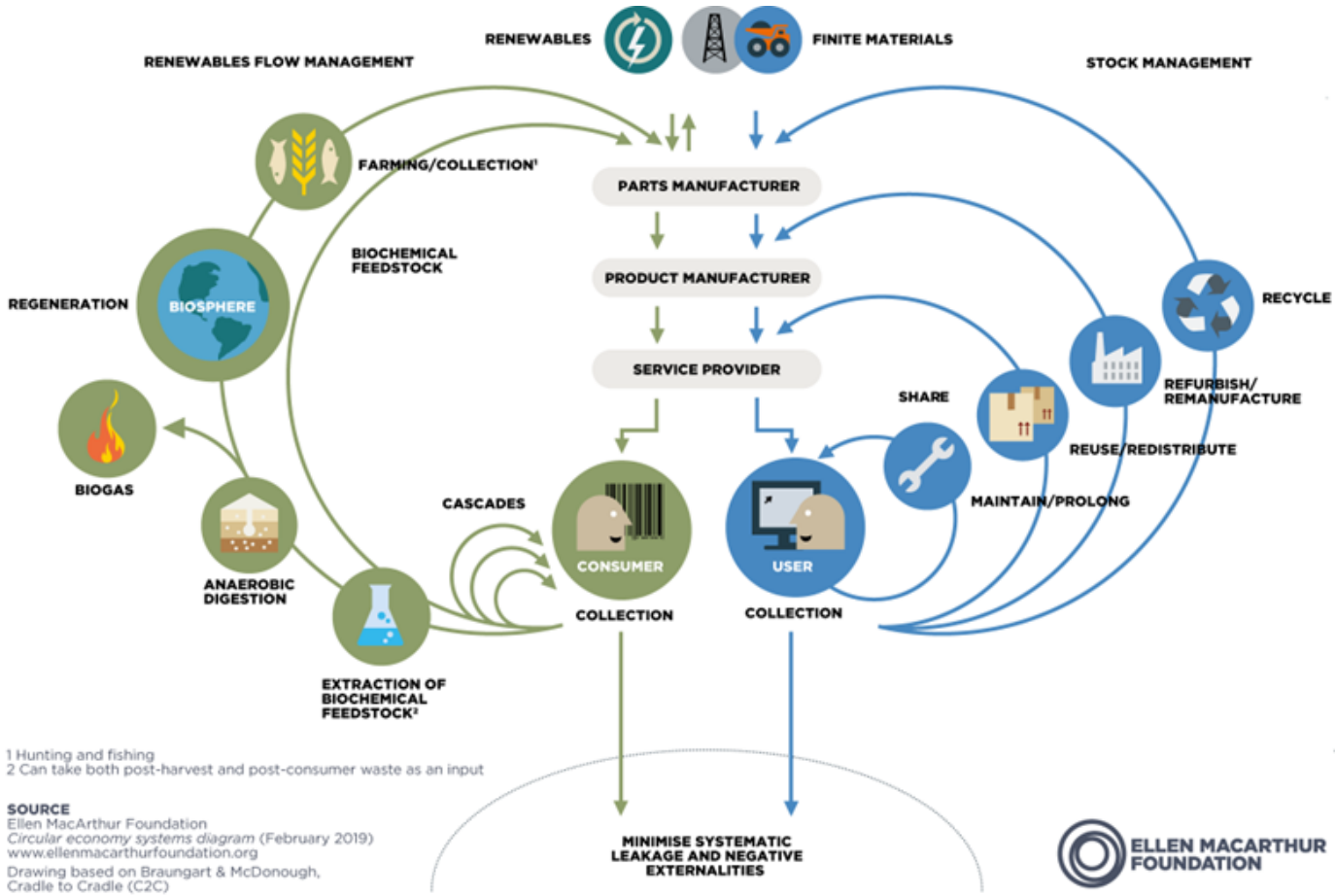
CASE STUDY: PATAGONIA DESIGNING FOR CIRCULARITY

Patagonia is working towards becoming a circular company and implementing circular design principles in the development of new and existing products. Patagonia is trialling a garment rental program where customers can rent clothes and send them back. Patagonia's supply chain accounts for the biggest slice of their carbon footprint – 97 percent with 86 percent stemming from raw materials alone, so the rental program will reduce the amount of garments produced, thereby decreasing their carbon footprint. Patagonia also has a second hand resell site, Worn Wear, where customers can buy used garments or trade in their used Patagonia clothing for credit to use towards Patagonia's products. Patagonia is designing a new T-shirt which will be its first product considering the full garment life cycle in mind. Patagonia aims to own all its waste across the lifespan so that the shirt is never discarded in landfill (98).

By designing for circularity corporations and industries can increase their resource and cost efficiency by keeping materials in the loop. Moreover, by encouraging sufficiency, less resources will be extracted and wasted. This is aligned with a purpose-driven business model where the goal is to contribute towards the social foundation by creating social and or environmental value rather than to maximise profits over the short-term. In contemporary business models, however, sufficiency often conflicts with the business objectives where growing profit through increased product sales remains a central goal.

Photo by Matjaz Krivic, Climate Visuals Countdown

FIGURE 11: A CIRCULAR AND REGENERATIVE ECONOMY AND THE DIFFERENT PROCESSES (9)



Functionality rather than ownership

New business models have emerged to take advantage of overcapacity that can be found in various industries. These business models often embed delivery of functionality rather than ownership, through shared models or Product-Service Systems (PSSs), that enable a corporation to maximise utilisation and deliver sustainable profits, and simultaneously minimise resource usage (26, 99).

In this business model, corporations keep ownership of the product, and consumers pay for the usage of the product as a service. This opportunity is facilitated by the Third and Fourth Industrial Revolution and the rise of platforms, social networks and the "Internet of Things" (IoT) (20,21). Examples of business models that provide services rather than ownership include apartment- and car-sharing services such as Airbnb and GoGet.

This business model still requires, and in many respects incentivises, a focus on all steps of the value chain being sustainable, from product design, extraction of raw material, distribution, manufacturing to delivery and reverse-logistics. More and more companies are accounting for their entire supply chain, including both direct and indirect emissions. However, this can still be a challenge due to vast complexity in the supply chain and lack of transparency and traceability. Still, emerging technologies, such as Blockchain technology and the IoT, embed opportunities to tackle some of the current challenges.

Photo by Acinquantadue, Getty Images

CASE STUDY: GOGET

There are 20.1 million registered vehicles in Australia, accounting for 11% of the country's total production of greenhouse emissions (100). Demonstrating functionality rather than ownership, the Australian car share company, GoGet CarShare, helps reduce emissions and the need to own a car. GoGet provides a subscription service enabling users to hire a car short-term through an app. With 3,000 cars, GoGet estimates that for every GoGet car, 10 cars are taken off the road. The costs and ongoing maintenance of owning a car in Australia including registration, insurance, servicing, car loan repayments, tolls and fuel are estimated to cost households running a medium sized car $13, 782 p.a. (101). Reducing the need to own a car, car share companies like GoGet CarShare help lower fossil fuel emissions and eliminate the costs incurred in private car ownership.

Digitisation

The emergence of new technologies and adaption of existing technologies in new areas can enhance the sustainability of a product by different means. It can lead to reduction in the need for material resources by dematerialising products through creating digital solutions (102). This means that products that have previously been physical are now delivered digitally. Examples of this are especially evident in the entertainment industry, including music, movies and books.

Moreover, digital solutions can also complement traditional physical products by increasing value creation, optimising

Photo by Carlos Amat Photography, Walmart

Another important aspect of digitisation is developing platform economies. Apps and platforms are elemental to attaining an effective sharing economy and connecting the provider of services with the user (104). A key aspect of delivering functionality rather than ownership in a sharing economy is to optimise the value creation or effective use of a product or service while using minimal resources in doing so. To do this, there is a need for platforms that can connect the user (the one in need of a service or product) with a provider (the one who can deliver the service or product). Factors like location and availability are important to enable an effective sharing economy.

Ultimately, digitisation is an important enabler in a more circular economy and has great potential to reduce unsustainable practices related to delivery. However, it is vital to include energy use as a resource in the digitisation process. Unless new solutions utilise renewable and efficient energy sources, the digitisation can create new problems. In addition, it is important to understand the different alternatives of delivering digital solutions. For example, what might be the best solution for a digital product - cloud-based solutions that requires a lot of energy due to streaming, or a digital product that needs to be downloaded but requires more storage?

CASE STUDY: TELEHEALTH ACCESS TO HEALTH SERVICES

Telehealth, also known as virtual care, connects patients with health professionals to deliver health care over the phone or through video conferencing. The digitisation of health care enables timely access to health services to patients in rural and remote areas, and reduces the travel time for clinicians and patients. The convenience and accessibility of telehealth was an asset to health care providers during the COVID-19 pandemic, which saw the widespread uptake of telehealth services to reduce the spread of COVID-19, and to provide health care to COVID-19 patients and people isolating at home (106).

Moreover, it is important to account for the rebound effect. Even though something is digital does not necessarily mean that the impact will decrease. Empirical evidence has shown that an increase in efficiency leads to an increase in consumption (105). This is due to efficiency, accessibility, reduction of cost and convenience. An example includes the digitisation of photos with cloud storage with exponential growth in storage and energy requirements and less incentive to delete unwanted photos. Still, the rebound effect can have a positive impact when the service contributes towards the social foundation. Examples include a rising access to education and training through dematerialisation of tools and equipment, and online access.

QUESTION TO CONSIDER

How does the business deliver its products/solutions? Consider both the business' operations and those of its suppliers

How does it encourage sufficiency in the consumption of its products/solutions?

How does it offer circular user models, such as sharing and leasing models?

How does it design for circularity by other means by taking back, reusing and recycling of products?

How does it dematerialise its products or optimise the durability of the products by digitisation?

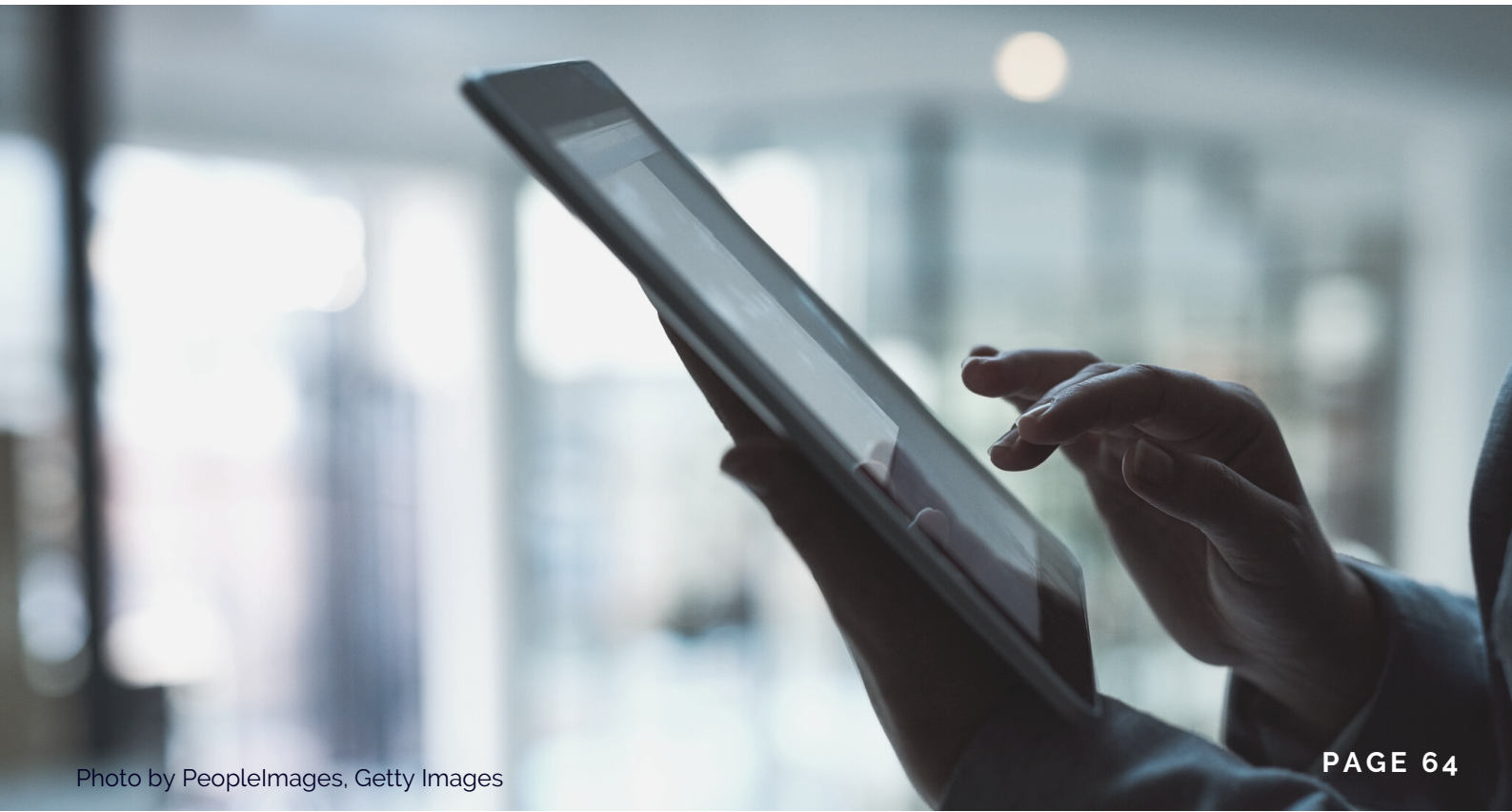


Photo by PeopleImages, Getty Images

4.6 IMPACT

A business' purpose is its intended impact and the value it strives to create. It is not, however, guaranteed that the business will create the value it has intended. Moreover, the business impact also includes its externalities. Externalities are impacts where the costs or the benefits are not borne by the parties directly involved in the transaction. It is therefore key for a sustainable company to understand and monitor its total impact and how this impact evolves over time.

As discussed throughout this report, there are several elements that are important to attain a sustainable business model, from the business organisation to production and delivery. Through these processes negative and positive externalities are created (107). For example, a wind farm built with the purpose of creating renewable energy produced in a sustainable and just manner. The company contributes towards the social foundation by providing energy, and the environmental ceiling by mitigating the need for fossil-based energy. However, there can still be negative externalities, such as disrupting the local biodiversity, especially harming birdlife.

As addressed in the governance section, a company should ensure solid reporting and governance of its impact. In doing so it will more likely address the key externalities and understand its negative and positive impacts. A sustainable business needs to continuously reassess its total impact as it evolves, ensuring that it continues to deliver on its purpose, and to minimise negative externalities while promoting positive ones.

Ultimately, a company is more likely to achieve its purpose and attain a positive impact when the full enterprise design, especially their governance and finances, are aligned with their purpose. As addressed in the Organisation section (4.3), a company is dependent on an ownership model, value distribution and operational timeframe that enables the company to deliver on its purpose, thereby ensuring that their finances and governance are aligned.

Photo by Tourism Australia

CASE STUDY: RIVERSIMPLE

The hydrogen powered electric car company, Riversimple, is a purpose-driven company seeking 'to pursue, systematically, the elimination of the environmental impact of personal transport.' The company's purpose is thoughtfully implemented across product design, company structure and governance.

Incorporating elements of circular economy to reduce its environmental impact, the cars are designed to be energy efficient using hydrogen rather than batteries for power, lightweight materials and storing kinetic energy when the car brakes (108). Another element of circularity is Riversimple's subscription model, where cars are provided as a service rather than sold (109). A subscription includes all associated running costs and maintenance of the car, making it efficient for the consumer who only pays when they need a car. At the same time, a subscription addresses the cost barrier of purchasing electric vehicles when compared to cheaper fossil fuel powered cars. Subscriptions reduce ownership of petrol-powered cars and offer a more cost-effective alternative, accelerating the transition to electric vehicles on the road.

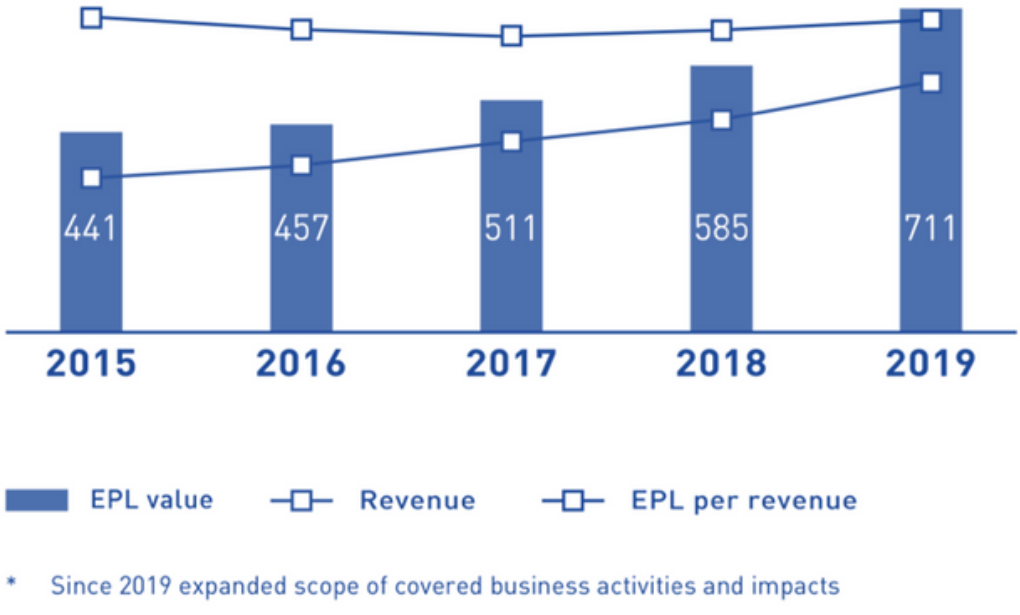
Purpose is embedded in Riversimple's governance through its custodian corporate structure. Custodians govern the organisation representing six stakeholder groups including environment, users, neighbours, staff, investors, and commercial partners (110). The Board's duty is to pursue the organisation's purpose while balancing and protecting the benefit streams of all six stakeholder groups, rather than maximising the value of one.

CASE STUDY: PUMA ENVIRONMENTAL P&L

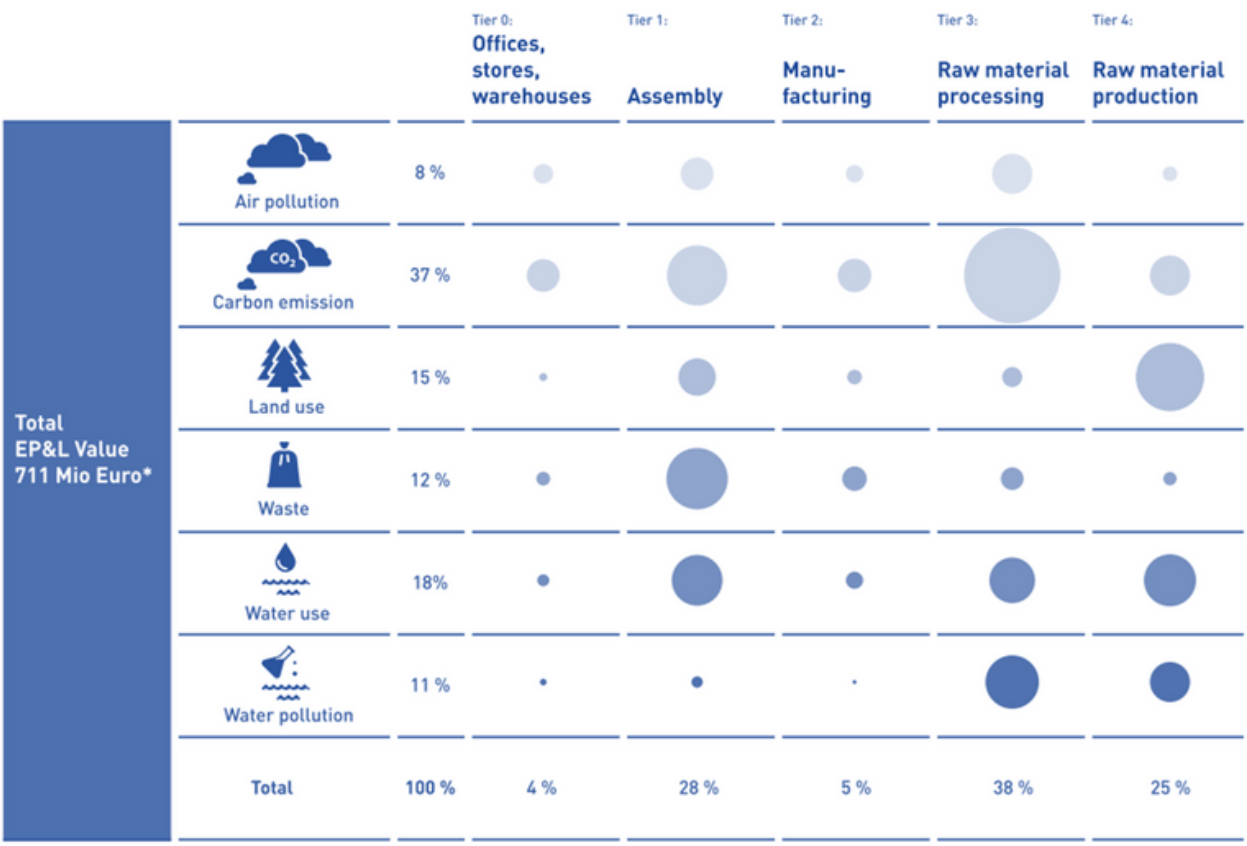
In 2011 Puma pioneered the concept of the environmental profit and loss (EP&L), where they used a lifecycle assessment approach to identify the environmental cost of producing their products. Developed in conjunction with environmental consultancy Trucost (now owned by S&P) and PwC, the company found €145 million in environmental costs in 2010, with 94% coming from the company's supply chain. This equated to 4.2% of the total market value of the company that year and 63% of its profits. While focused on an incomplete set of impacts, it was nonetheless the first company to seek to understand how profitable it really was (111).

Over time Puma continued to evolve the approach, adding further impact categories such that in 2019 EP&L represented 270% of the company's profits. This effort to continuously improve the measure has meant that many impacts not previously captured now are, including moving further down the supply chain. Over the years the company implemented initiatives to address the key sources of negative impacts in the supply chain, including for example reducing scope 3 greenhouse gas emissions by 12%, despite revenues increasing more than 65% between 2017 and 2020.

Puma was a pioneer and brave to introduce the EP&L in 2011. However, in 2021 the company did not disclose the EP&L for 2020, as it said it was reviewing the methodology because it did not properly account for the positive impacts from its initiatives. This may well be the case as life cycle assessments often use top-down averages, rather than bottom-up actuals. Even so, it will be important that Puma is transparent on how it updates the methodology for EP&L if it is to maintain its credibility (111).



SOURCE PUMA 2020 ANNUAL REPORT



The chart above shows that the environmental impact of our value chain is dominated by material processing, while product assembly and raw material production also are important stages of our value chain.

SOURCE PUMA 2020 ANNUAL REPORT

QUESTIONS TO CONSIDER

What is the total impact of the business?

Has the business achieved its purpose?

What environmental and/or social value has been created? Is it sustainable?

What externalities has the business created, both positive and negative?

Relevant frameworks

There are existing frameworks that are aligned with the principles of a sustainable economy as addressed in this report. The following cases exemplify three frameworks that can be valuable for companies, to use in their transition towards a more sustainable business model.

The Doughnut Design for Business is a tool developed by the Doughnut Economics Action Lab (DEAL) enabling businesses to engage with Doughnut Economics (112).

The Economy for the Common Good (ECG) is an economic model which helps companies assess their contribution to the common good, and align their business with one that provides a good life for everyone on a healthy planet (113).

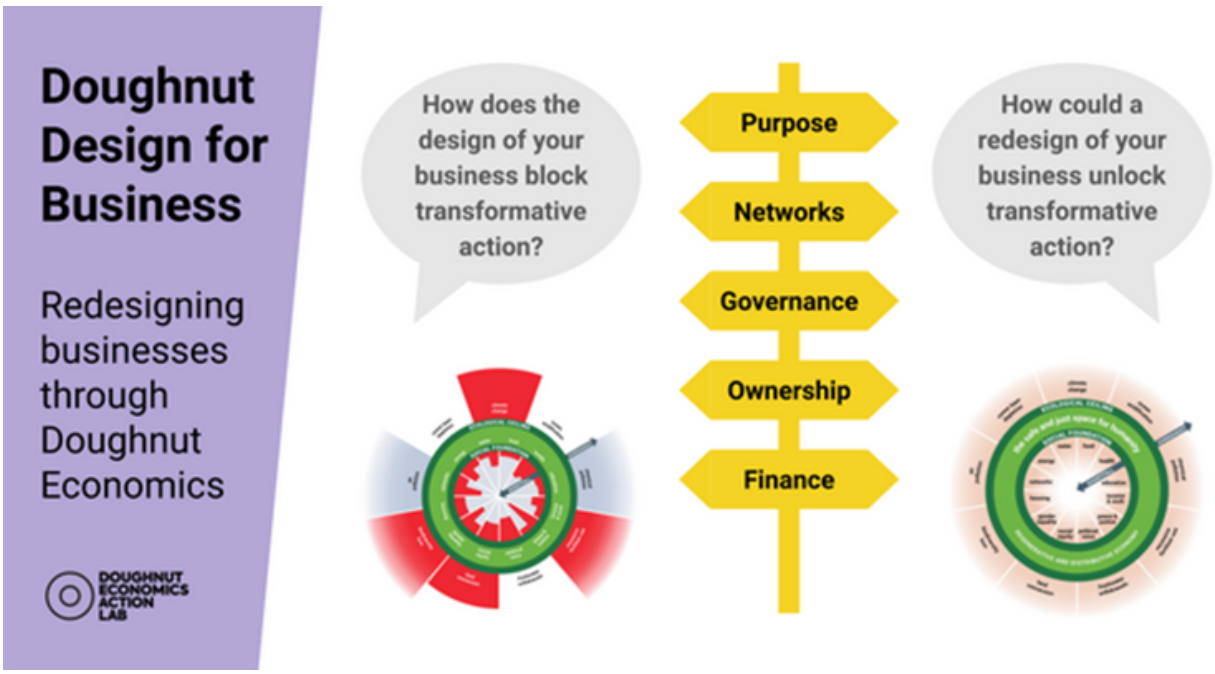
The Future-Fit Business Benchmark is a holistic strategic management tool designed to help companies and investors transition towards a more sustainable future (114).

Photo by Russwintherington1, Getty Images

DOUGHNUT DESIGN FOR BUSINESS

To enable businesses to engage with Doughnut Economics, DEAL has developed a tool that guides businesses to rethink, and redesign based on the concept of enterprise design. This concept consists of five design layers reflected earlier in this report: Purpose, Networks, Governance, Ownership and Finance. The tool explores these five design layers in a workshop format. The workshop is aimed to be used by a workshop facilitator, who can engage any type of business in exploring their enterprise design, and how they might become more regenerative and distributive in their strategies, operations, and impacts.

The tool is available through the DEAL webpage, accompanied by a paper, 'What Doughnut Economics Means for Business', explaining context and core concepts from the tool, as well as exemplifying business design. Doughnut Design for Business | DEAL (doughnuteconomics.org).



Source: Doughnut Economics Acton Lab

ECONOMY FOR THE COMMON GOOD

The Economy for the Common Good (ECG) is an economic model which promotes a good life for everyone on a healthy planet as its primary goal. This concept is built on principles of a value-driven business, defined as human dignity, solidarity and social justice, environmental sustainability, and transparency and co-determination.

ECG provides a framework for businesses, municipalities and educational institutions to use to assess their contribution to the common good. The framework consists of the Common Good Matrix and the Common Good Balance Sheet. The Common Good Matrix is built on 20 themes which offer guidance for how to assess an organisation's contribution towards the common good.

The Common Good Balance Sheet draws upon the matrix and provides a tool for organisations to use to describe and evaluate their own contribution. To apply ECG, a company uses the Balance Sheet to draw up a Common Good Report, which evaluates and illustrates the company's position in becoming a common good company addressing their contribution within each of the four areas across its value chain.

COMMON GOOD MATRIX

VALUE / STAKEHOLDER	HUMAN DIGNITY	SOLIDARITY AND SOCIAL JUSTICE	ENVIRONMENTAL SUSTAINABILITY	TRANSPARENCY AND CO-DETERMINATION
A: SUPPLIERS	**A1** Human dignity in the supply chain	**A2** Solidarity and social justice in the supply chain	**A3** Environmental sustainability in the supply chain	**A4** Transparency and co-determination in the supply chain
B: OWNERS, EQUITY- AND FINANCIAL SERVICE PROVIDERS	**B1** Ethical position in relation to financial resources	**B2** Social position in relation to financial resources	**B3** Use of funds in relation to social and environmental impacts	**B4** Ownership and co-determination
C: EMPLOYEES, INCLUDING CO-WORKING EMPLOYERS	**C1** Human dignity in the workplace and working environment	**C2** Self-determined working arrangements	**C3** Environmentally-friendly behaviour of staff	**C4** Co-determination and transparency within the organisation
D: CUSTOMERS AND OTHER COMPANIES	**D1** Ethical customer relations	**D2** Cooperation and solidarity with other companies	**D3** Impact on the environment of the use and disposal of products and services	**D4** Customer participation and product transparency
E: SOCIAL ENVIRONMENT	**E1** Purpose of products and services and their effects on society	**E2** Contribution to the community	**E3** Reduction of environmental impact	**E4** Social co-determination and transparency

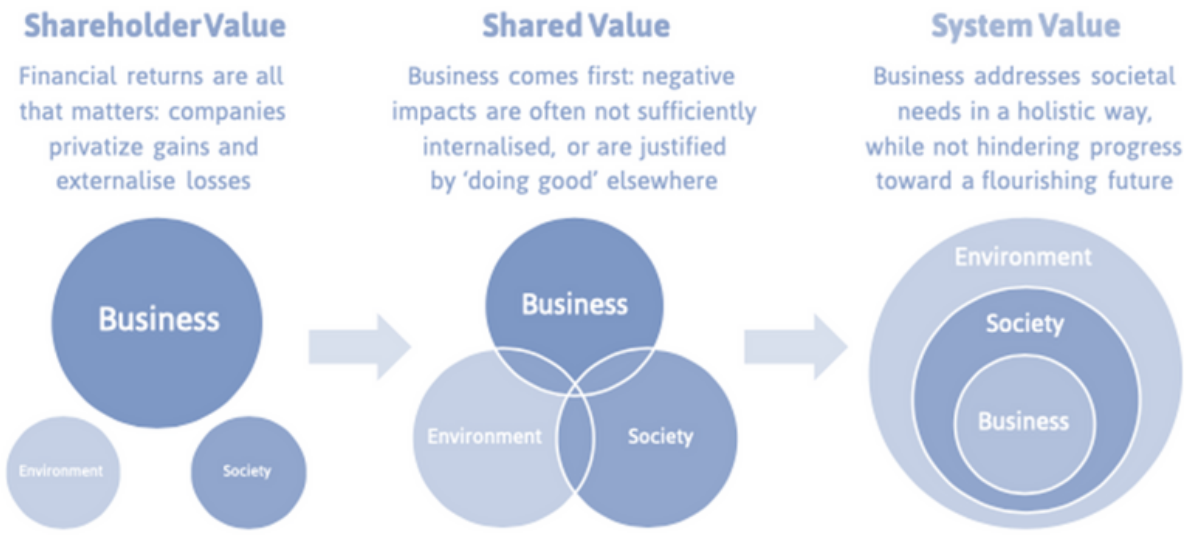
Source: Economy for the Common Good

THE FUTURE-FIT BUSINESS BENCHMARK

The Future-Fit Benchmark is a free business tool with the aim to guide businesses, investors, and advisors in creating real progress towards a flourishing future aligned with the Doughnut Economics model.

The tool seeks to encourage and equip all economic actors, and thus the economy, to move away from a narrow focus on shareholder value, towards System Value. System Value is based on a strong sustainability approach that accounts for the hierarchy between the economy, society, and the environment. A thriving economy is dependent on a strong society, and a strong society can only prosper in a healthy natural environment. Ultimately, to sustain a business, there is a need to create System Value. This means minimising the negative impact and optimising the positive impact that a business has on society and the environment. CONTINUED

FROM SHAREHOLDER VALUE TO SHARED VALUE TO SYSTEM VALUE



Source: Future-Fit Business

The benchmark consists of 23 break-even goals and 24 positive pursuits that are divided into 8 topics: 1. Energy, 2. Water, 3. Natural resources, 4. Pollution, 5. Waste, 6. Physical presence, 7. People, and 8. Drivers. The break-even goals represent the minimum standard which the business needs to reach to align with a Future-Fit society. Whereas the positive pursuits embed any activity that goes beyond the break-even point and contributes towards speeding up the transition. Each of the goals within the benchmark align with one or several Sustainable Development Goals.

When put into the perspective of the Doughnut Economics model, the break-even goals represent the minimum standard required to operate within the Doughnut - below the ecological ceiling and above the social foundation. The positive pursuits represent the actions that contribute towards attaining the Doughnut by creating social and environmental value beyond the minimum standard.

Photo by PeopleImages, Getty Images

4.6 CONCLUSION

This report has attempted to conceptualise the different characteristics of a sustainable business model, that are necessary to thrive in a sustainable economy as defined by the Doughnut Economics model. It has looked at the overarching areas addressing: business purpose, organisation, production of products/services and management of resources, delivery of products/services and total impact.

As illustrated in the case studies, there are companies that encompass characteristics of a sustainable business model. It is, however, important to emphasise that even though a business may possess one or more of these elements, doing so does not guarantee that its business model is sustainable. H&M is a prime example with the highest score based on CDP reporting and its highly developed operational efficiency. However, their business model remains unsustainable as it is dependent on maximising consumption and is primarily linear.

The Recycling Lives case study, on the other hand, is an example of a sustainable business model that encompasses several of the characteristics discussed. It is a purpose-driven business model, combining business and charity, with the objective of creating social and environmental value, using its economic gains to sustain social initiatives. The company's operations are based on creating circularity, by offering recycling services of waste, from metal and textile to paper and plastic. Moreover, they create circularity within the food industry.

Based on the findings in this report, in order to align with a sustainable economy, business models need to be:

- purpose-driven, creating social/environmental value,
- distributive, creating and distributing value more equally in the supply chain and in the economy,
- circular and regenerative, producing and delivering products/services in a circular and clean manner, and
- operating with long term objectives, accounting for the long term costs and value creation of its operations.

To what extent a business needs to perform in each of these areas to be sustainable as defined by the Doughnut is, however, unknown. Moreover, the feasibility for a company to possess all these characteristics is also unclear. Still, in a sustainable economy based on the Doughnut Economics model, these are the characteristics that a company will need to aspire to and work towards, if it is to thrive within an economy that respects the social foundations and ecological ceilings needed to be sustainable.

5 SUSTAINABLE BUSINESS MODEL CANVAS

This report has proposed a framework to understand the characteristics of a sustainable business model aligned with a sustainable economy. This section will present the framework and how it might be used. The five overarching areas are reflected in the sustainable business model canvas, portraying the respective questions. The canvas, outlined on the following page, can be used by both companies and investors to assess a company's alignment with a sustainable economy.

The foundation of the canvas represents a company's purpose, and how it is organised. The purpose is a company's reason for existing and represents its drivers. How a company is organised refers to the ownership model, how it distributes value in the supply chain, its networks, operational timeframe, and governance systems. The operation represents a company's production, delivery, and overall impact. The production refers to how a company produces its products and services, and delivery refers to how a company delivers its products and services. The impact addresses the overall and continuous impact of the company, intended and unintended.

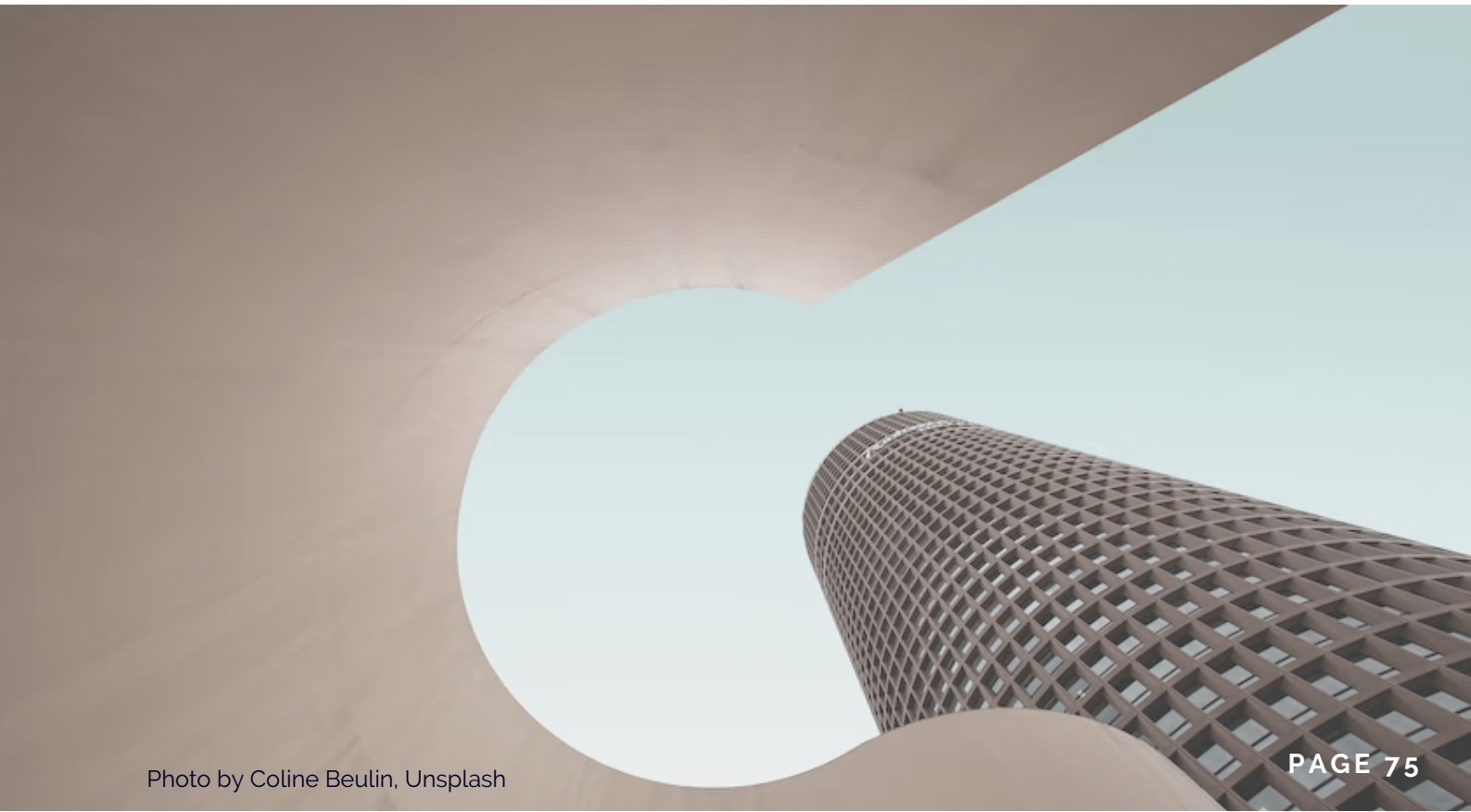


Photo by Coline Beulin, Unsplash

SUSTAINABLE BUSINESS MODEL CANVAS

PURPOSE

FOUNDATION

WHAT IS THE BUSINESS' PURPOSE?

Why does the business exist?
What values does it create, socially and/or environmentally?
How is the created value sustainable?

ORGANISATION

OWNERSHIP	VALUE DISTRIBUTION IN THE SUPPLY CHAIN	NETWORKS	OPERATIONAL TIMEFRAME	GOVERNANCE
What is the ownership model? What are the owners' main objectives and how might that affect sustainability?	How is the value distributed and captured throughout the supply chain?	Who are the business' key stakeholders? What are their values, and do they align with those of the business? How is the company partnering with other actors to tackle challenges and facilitating the necessary ecosystem?	Does the business operate with short or long term objectives and what are the effects on sustainability?	How does the business govern its operations? What frameworks are used to report on environmental, social and governance (ESG) practices?

PRODUCTION

DELIVERY

OPERATION

HOW DOES THE BUSINESS PRODUCE ITS PRODUCTS/SOLUTIONS?

How does it promote efficiency in terms of energy and resource use?

How does it promote a circular production? How does it create value from waste?

How does it utilise renewable and natural processes?

HOW DOES THE BUSINESS DELIVER ITS PRODUCTS/SOLUTIONS?

How does it encourage sufficiency in the consumption of its products/solutions?

How does it offer circular user models, such as sharing and leasing models?

How does it design for circularity by other means by taking back, reusing and recycling of products?

How does it dematerialise its products or optimise the durability of the products by digitisation?

IMPACT

WHAT IS THE TOTAL IMPACT OF THE BUSINESS?

Has the business achieved its purpose?
What environmental and/or social value has been created? Is it sustainable?
What externalities has the business created, both positive and negative?

SUSTAINABLE BUSINESS MODEL CANVAS

Purpose
What is the business' purpose?
In a sustainable economy, all businesses need to contribute towards attaining a thriving and healthy society and environment. This means that they must contribute indirectly or directly to create social and/or environmental value. The value is sustainable when it is sufficient, meaning it does not fall short of or exceed the necessities.
Evaluate the company's purpose by addressing the following questions: Why does the business exist? What values does it create, socially and/or environmentally? How is the created value sustainable?

Organisation
1. Ownership
The owners' objective is elemental to steer the business' focus, choices, and direction. A key challenge in the contemporary economic system and business model is the unequal distribution of value throughout the value chain, and the vast focus on profit maximisation and growth. Alternative ownership models, such as employee-ownership, can help tackle these challenges.
Evaluate the company's ownership structure by addressing the following questions: What is the ownership model? What are the owners' main objectives and how might that affect sustainability?

Organisation
2. Value distribution in the supply chain
From a social perspective, the business model needs to be inclusive and distributive by design. This means the value created needs to be distributed more equitably to bring everyone above the social foundation. From an environmental perspective, environmental protection needs to be a fundamental part of the production and operation processes throughout the supply chain. The marginal value of labour and natural capital in the current supply chain is undervalued and needs to change to attain a sustainable economy. In practice, this means distributing the value captured at the top more equitably throughout the chain, giving labour and environmental protection a higher value.
Evaluate the company's value distribution by addressing the following questions: How is the value distributed and captured throughout the supply chain?

Organisation
3. Networks
A company's network are its key stakeholders, such as customers, partners, suppliers, and distributers. Attaining a sustainable value chain will be dependent on all actors involved. Therefore, a company should work with its stakeholders to ensure that their values and goals are aligned. In addition, to attain the necessary ecosystem and infrastructure to ensure the shift towards a low-carbon circular economy, it will require collaboration and partnership between different industries. Where necessary, a company should work with relevant actors to facilitate this.
Evaluate the company's networks by addressing the following questions: Who are the business' key stakeholders? What are their values, and do they align with those of the business? How is the company partnering with other actors to tackle challenges and facilitating the necessary ecosystem?

Organisation
4. Operational timeframe
The excessive focus on short-term gains and profits hinders companies' ability to attain a sustainable business model and transition to creating sustainable long-term value. In order to ensure social, environmental and economic sustainability, it will be necessary to move from short-term objectives to focus on long term value creation.
Evaluate the company's operational timeframe by addressing the following questions: Does the business operate with short or long term objectives and what are the effects on sustainability?

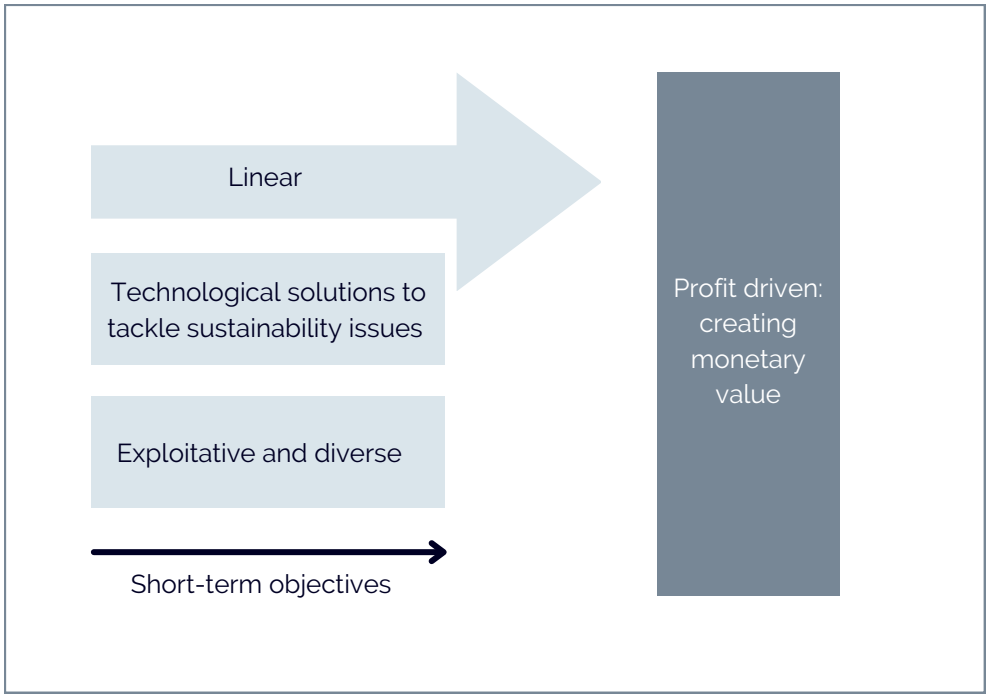
Organisation
5. Governance
The organisations' governance, and ESG reporting are key elements for developing sustainable business practices, not only to maintain effective oversight and control, but to communicate sustainability performance honestly and transparently to stakeholders. Sustainability reporting promotes accountability, especially when coupled with targets for improvement. Adequate ESG data enables investors to steer capital towards sustainable business practices.
Evaluate the company's governance by addressing the following questions: How does the business govern its operations? What frameworks are used to report on environmental, social and governance (ESG) practices?

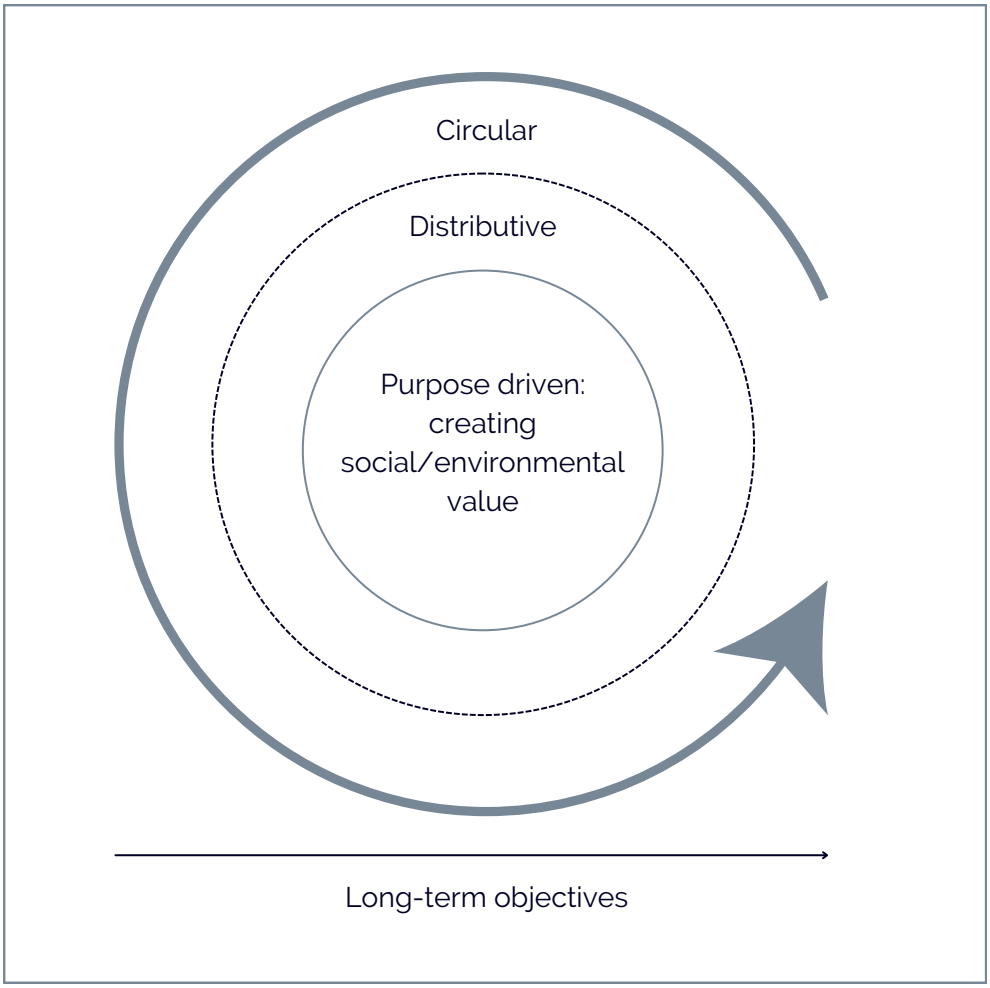
Production
How does the business produce its products/solutions? Consider both the business' operations and those of its suppliers
To achieve a sustainable production of goods and services, a company should strive to ensure three main achievements throughout its value chain: 1. Energy and resource efficiency, using fewer materials and energy, creating less waste and pollution, to deliver comparable functionalities. 2. Circularity, creating value from waste, and keeping resources in the loop, ultimately designing out waste. 3. Using renewable and natural processes, rather than non-renewable resources and man-made artificial production systems.
Evaluate the company's production by addressing the following questions: How does it promote efficiency in terms of energy and resource use? How does it promote a circular production? How does it create value from waste? How does it use renewable and natural processes?

Delivery
How does the business deliver its products/solutions? Consider both the business' operations and those of its suppliers
To attain a sustainable business model, a company needs to address its entire value chain, not only looking at the supply side but also the demand side. Companies need to address sufficiency, ensuring that they do not encourage overconsumption. Digitisation and circularity are elemental aspects to attaining a sustainable delivery of products and services.
Evaluate the company's delivery by addressing the following questions: How does it encourage sufficiency in the consumption of its products/solutions? How does it offer circular user models, such as sharing and leasing models? How does it design for circularity by other means by taking back, reusing and recycling of products? How does it dematerialise its products or optimise the durability of the products by digitisation?

Impact
What is the total impact of the business?
A company should strive to understand its total impact by assessing how well it is delivering on its intended purpose, evaluating the actual value created. In addition, a company should understand its externalities, both positive and negative. Even though a company's externalities maybe unintended impacts, it should be accounted as part of a company's total impact.
Evaluate the company's impact by addressing the following questions: Has the business achieved its purpose? What environmental and/or social value has been created? Is it sustainable? What externalities has the business created, both positive and negative?

FIGURE 13: TRANSITIONING TOWARDS SUSTAINABLE BUSINESS MODELS





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