AN INTRODUCTION TO

USING BLOCKCHAIN FOR SUSTAINABILITY

MAXIMISING YOUR TRIPLE BOTTOM LINE

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CHAPTER OVERVIEW

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KEY TAKEAWAYS

- Businesses are investing in digital technologies to achieve their sustainability goals.

ECONOMIC INSIGHTS

- Blockchain technology's transparent and decentralised nature allows for open communication, internal efficiency through automation and smart contracts, and financial and social inclusion, making it a key factor in achieving sustainability.

- Using blockchain technology for supply chain management can help businesses achieve their sustainability goals by promoting a circular economy, increasing transparency, and improving efficiency through automation with smart contracts.

SOCIAL INSIGHTS

- Social sustainability is becoming increasingly important, and blockchain technology can help with financial and social inclusion by promoting trust and accountability and enabling equitable and sustainable development.

- DAOs offer businesses an approach to decision-making that includes contributions from anyone in the community, promoting diversity and strengthening of community management.

- Blockchain technology can be used for charity purposes to build trust with donors by providing a transparent ecosystem where donations can be tracked and verified.

ENVIRONMENTAL INSIGHTS

- Decentralised waste management systems through blockchain can streamline coordination with waste removal organisations, incentivise environmentally friendly waste disposal practices, and engage consumers in businesses' sustainability efforts.

- Blockchain technology can help create a more efficient and sustainable renewable energy market, providing cost-effectiveness, regulatory compliance, and competitive advantage for organisations investing in renewable energy.

- Carbon credits and offsets can be traded on the blockchain, creating an additional revenue stream for organisations and demonstrating their commitment to environmental sustainability.

- Barriers to the adoption of blockchain include a lack of knowledge, a steep learning curve, data compliance, the conception of blockchain as a major energy consumer, and cost-efficiency.

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PLANTING THE SEED

In today's business landscape, sustainability has become a key differentiating factor for enterprises. The upcoming booms are rooted in digitalisation and sustainability. Still, there are problems with current sustainability approaches. One major problem is greenwashing, where organisations claim their initiative to be way more sustainable than it actually is. Additionally, sustainability strategies often only serve single sustainability pillars, instead of sustainability as a whole. More and more enterprises are now investing in digital technologies as a means to achieve their sustainability goals. It is strongly believed that blockchain technology can be the missing puzzle piece to explicate the crossing of digitalisation and sustainability. Blockchain technology gives the opportunity to focus on the complete triple bottom line, instead of on single pillars.

THREE PILLARS OF SUSTAINABILITY

Often, sustainability is solely associated with the environmental aspect, but it encompasses much more than that. In essence, sustainability is about achieving continuous growth within an enterprise. It is built upon three fundamental pillars that are often referred to as the "triple bottom line" (TBL).

Economic Sustainability (Profit):
Includes all aspects within the business, which aim towards creating economic growth without colliding with environmental and social needs

Social Sustainability (People):
Includes all social features a business should imply, in order to create a planet driven by equal and inclusive manners

Environmental Sustainability (Planet):
Can be defined as the attention of a business to act and adjust in favor of the planet

All in all, it is the mixture of all three pillars that allow for a fitting plan of action. The idea of creating shared value is a good representation of what sustainability consists of. Whilst focusing on the triple bottom line, businesses simultaneously do such whilst still aiming for profitability, cost-effectiveness and risk mitigation. So where can blockchain play a role, to cater to all those goals?

Another term that has gained popularity is ESG goals (Environmental, Social, and Governance). ESG goals primarily focus on monitoring and controlling business activities and business performance toward achieving sustainability. In contrast, the triple bottom line looks at the business from a wider perspective by taking into account sustainability beyond the four walls of the organisation.

A POWER COUPLE: BLOCKCHAIN TECHNOLOGY DRIVING SUSTAINABILITY

More and more have jumped on the blockchain bandwagon and the interest is assumed to only increase in the future. To keep it short and simple: the main function of blockchain technology is secure data storage and information sharing (transactions) across a wide network.

The main reason, as to why blockchain can be a key to sustainability improvements are its characteristics of being:

- Decentralised
- Transparent
- Accessible
- Secure

All in all, blockchain technology's transparent and decentralised nature allows for open communication and traceability of data. It can drive internal efficiency through automation and smart contracts and embraces financial and social inclusion. These are only a few of blockchain technology's many advantages concerning sustainability.

01
—ECONOMIC SUSTAINABILITY

In comparison to the other two pillars of the TBL, economic sustainability starts from within the business, before being able to benefit from it externally. Focus lies on cost-effectiveness in the most efficient way possible. Through sustainably improving internal business processes, society and the planet can only profit from sustainable business development.

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REGENERATIVE & DISTRIBUTIVE ECONOMY

THE DOUGHNUT ECONOMY

A doughnut economy alternative is gaining traction. To thrive, growth needs to be balanced. In general, the doughnut framework is an economic model that balances social and ecological concerns. The regenerative design talks about the implementation of a circular economic model within business processes, in order to achieve such. The distributive design of the doughnut economy can be enhanced by leveraging modern technologies, such as blockchain. Public access blockchain can provide reach to those who need it most in sectors like finance and healthcare.

THE CIRCULAR ECONOMY

The concept of circular economy is applicable throughout the entirety of the business, leading to more sustainable business management. This economic model focuses on resource and waste minimisation, by keeping products and materials in use for as long as possible. The recycling and reusing of resources lead to a constant circle, leading to a reduction in waste and costs. This model can lead to new business opportunities and market exploration. Not only does the circular economy provide a deeper focus on environmental sustainability, but can enhance cost-effectiveness through product optimisation. Hence, from an internal perspective, this can be of economic advantage.

TRANSPARENCY AND TRACEABILITY

Using blockchain technology for supply chain management is crucial for promoting a circular economy, for example, by facilitating the reuse and recycling of products. Blockchain's traceable and distributed nature enables the secure sharing of information among multiple parties, leading to greater efficiency and transparency. This not only helps promote sustainable practices but also increases brand reputation by making data available to the public.

When choosing between private and public blockchains for circular economy projects, it's essential to consider the specific needs of the project. The choice can have an impact on the extent of traceability and transparency. Private blockchains offer more control over the network, while public blockchains provide greater transparency. However, sometimes a hybrid blockchain may be the best solution as it combines the benefits of both private and public blockchains.

Overall, implementing blockchain technology in supply chain management can help businesses achieve their sustainability goals by promoting a circular economy and improving transparency. By selecting the appropriate blockchain model, businesses can optimise their supply chain management and achieve greater efficiency, transparency, and sustainability.

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SMART CONTRACTS TO NAVIGATE EFFICIENCY

AUTOMATION OF TASKS

Smart contracts offer significant advantages to businesses, including faster contract execution and increased efficiency through automation. Decentralised finance (DeFi) provides a real-life example of how smart contracts can automate and simplify banking processes. By eliminating intermediaries like banks or lawyers, smart contracts reduce costs and save time. Additionally, the automated execution of a consensus ensures that all participants are informed about the outcome, enhancing transparency and trust in the process.

TRUST

Smart contracts offer a reliable and transparent alternative to traditional contracts by automating the execution of terms and conditions. Smart contracts foster trust between parties and reduce the risk of fraud or non-performance.

However, it is important to note that the trustworthiness of a smart contract is contingent on the trustworthiness of the blockchain on which it is running. Additionally, small errors in the "if-when" codes of smart contracts can compromise their immutability.

USE CASE: SUPPLY CHAIN & BLOCKCHAIN

Managing global supply chains involves navigating numerous steps and parties, which require extensive oversight. In this situation, blockchain technology can prove to be a game-changer and, thus, supply chain and blockchain are a match made in heaven. The transparency and security of the system enable multi-party decision-making and total oversight, making it ideal for supply chain management. Additionally, blockchain's decentralised finance concepts can facilitate the tokenisation of certain aspects along the supply chain.

An interesting example of tokenisation along supply chains can be seen in the food industry. Food supply chains require careful oversight to ensure quality, safety, and compliance. Using blockchain technology, specific aspects of the supply chain can be tokenised, such as the origin, quality, and certification of produce. These tokens can then be transferred between parties along the supply chain, enabling efficient and transparent communication.

For instance, a token can represent a shipment of organic produce from a particular farm. This token can then be passed on to a distributor, who can verify the produce's authenticity and quality. The distributor can then tokenise the shipment's transportation, including the truck's temperature, ensuring that the produce stays fresh and safe during transport. Finally, the retailer can tokenise the produce's final sale, providing information about the product's origin, quality, and certification to the consumer.

DATA MANAGEMENT

One major problem blockchain can tackle in the case of administration is data security. Even though blockchain and the concept of databases are both data storage and management tools, there are some major differences.

Most organisations rely on databases for their daily operations, but these databases only contain the latest information. In contrast, blockchains hold all data, including historical records, and feature a decentralised architecture. Additionally, blockchains ensure security through consensus mechanisms and the immutability of transactions, offering a more robust approach to security compared to traditional databases that rely on passwords. While password protection may be inadequate in protecting against cyber attacks, blockchain's security measures provide a solution for risk mitigation in IT and data security.

THE ART OF TRIPLE-ENTRY ACCOUNTING

Businesses aim to go digital. Especially the inconvenience of bookkeeping finds a future in going digital instead of sticking to the traditional practice of paper and pen.

The immutability and transparency of blockchain enables triple-entry accounting, liberating bookkeeping from the danger of fraud. Hence, making bookkeeping more effective and secure. This concept equalises the receipt with the transaction, whereby its content is verified through the use of cryptographic signatures. The "receipt" can be viewed by a shared third party to ensure transparency and accuracy in transactions. This is regardless of the consensus mechanism utilised by the underlying blockchain network.

02

SOCIAL SUSTAINABILITY

The focus on the people aspect has risen in popularity among the three pillars. The creation of shared value is heavily dependent on the consideration of society and those who shape it.

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FINANCIAL & SOCIAL INCLUSION

Accessibility is the main determinant of an inclusive society. As blockchain technology offers a secure, accessible way of doing transactions, it offers a framework for non-discriminatory contribution. Anonymity through pseudonyms allows for identity protection, leaving no space for differential treatment within the blockchain network.

Blockchain enables the creation of new business models for faster, cost-efficient spending, saving, and transferring of funds without the need for traditional banking systems or geographic barriers. Decentralised finance (DeFi) eliminates intermediaries, reducing barriers to accessing digital assets. By leveraging DeFi, businesses can lower these barriers, making it easier for people to access and use digital assets.

BANK THE UNBANKED

Blockchain technology can provide businesses with an opportunity to enhance their triple bottom line by enabling financial inclusivity and accessibility. Over 50% of the African population lacks access to traditional banking services[1]. With blockchain, there is no need for intermediaries such as banks to transfer funds, making it more accessible. Cryptocurrencies such as Bitcoin and Ethereum offer a way to shift away from traditional banking systems, enabling customers to access financial services without the need for a bank account. This approach provides a means for businesses to expand their customer base and reach new markets, while also promoting financial inclusion and accessibility.

DAOs

Decentralised Autonomous Organisations (DAOs) are reshaping how businesses approach decision-making by capitalising on the collective wisdom and perspectives of a diverse community. This participatory governance model allows stakeholders to directly influence outcomes, fostering an environment where the merits of ideas outweigh hierarchical position. Its potential also extends to the redistribution of economic control and decision-making power, offering a novel method to align incentives among stakeholders. This alignment is essential for ensuring sustained engagement and for fostering an environment where every contributor feels a sense of ownership and responsibility towards the collective mission of the organisation.

DAOs not only democratise contributions by permitting any community member to participate but also actively promote diversity and inclusion, breaking down traditional barriers to entry. This inclusivity has fostered what is now termed 'crypto altruism,' suggesting a promising future where social impact is intrinsic to organisational operations.

Beyond championing financial and social inclusivity, DAOs address critical business concerns by enhancing transparency — a cornerstone of business ethics. In a DAO, every transaction and decision is recorded on the blockchain, allowing for transparency and accountability unlike the capabilities of traditional organisation. Furthermore, community management is redefined within DAOs. They inherently emphasise community-driven initiatives and collective action, which can lead to more resilient and adaptive organisational structures.

However, embracing DAOs also requires navigating a nascent regulatory landscape, as legal frameworks continue to evolve around these new organisational structures. It's crucial for businesses considering a DAO to stay informed about regulatory developments to ensure compliance and to mitigate risks associated with governance, data security, and liability.

[1] 'Top African Challenger Banks Helping the Unbanked Through Mobile Services', *The Fintech Times*, 17 April 2021

For businesses aspiring to integrate DAOs into their models, the journey involves understanding the complexities of decentralised governance, the technicalities of smart contract deployment, and the ongoing commitment to community engagement. The long-term benefits of adopting a DAO structure can be transformative, offering an enhanced way of organising collective efforts in alignment with the ethos of decentralisation that blockchain technology embodies.

USE CASE: BLOCKCHAIN FOR A GOOD CAUSE

Chiefly, in the charity space, there is a major lack of trust in charity organisations. Within the promotion of a good cause, people's positive attitude towards the charity is the reason for donations. Scandals concerning the insecure and fraudulent handling of donations do not increase levels of trust between non-profit organisations and donors.

Blockchain technology can be a game changer for trust. Due to its derivative nature, donations can be verified and tracked. Hereby, the donors are assured that the donated amount will reach its purpose. Due to being able to demonstrate where the money goes exactly, charity organisations are able to maintain a wide network of trusted partners.

NO LIMITS TO CURRENCIES

As many charities operate from anywhere on the globe, currencies play an important role in the ability to donate cross-border. By implementing digital currencies, which are not dependent on any central bank, transactions can be made anywhere and at any time. A digital currency is an electronic money asset, which can be transferred and stored on blockchain technology. They are also known as "virtual money". Due to its electronic operationalisation, it not only enables transnational donations but also avoids fees regarding currency exchanges.
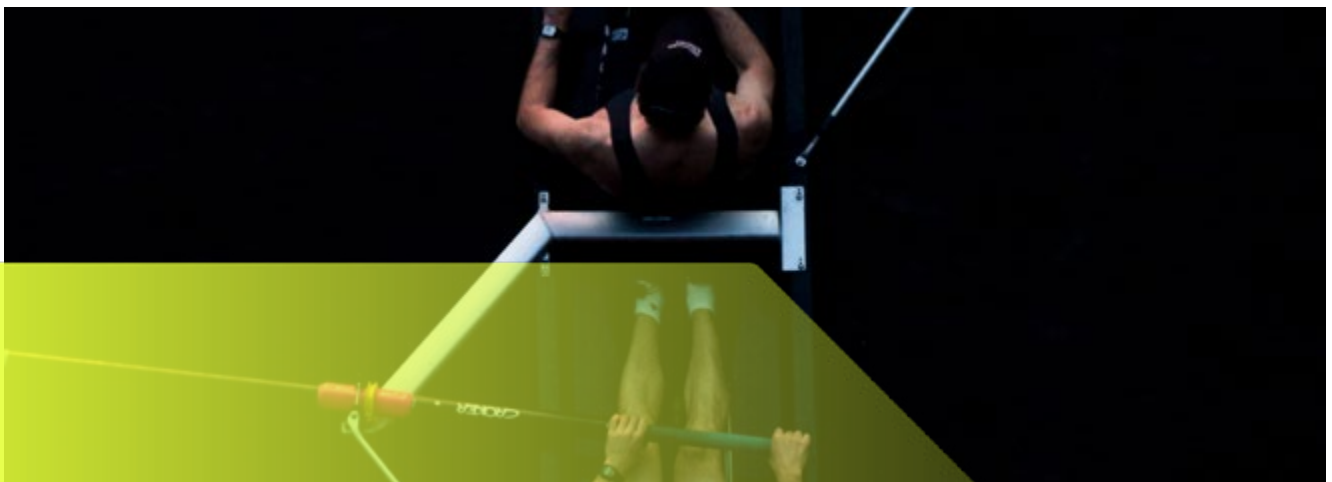
03
—ENVIRONMENTAL SUSTAINABILITY

Environmental sustainability is a key driver behind the growing demand for sustainability initiatives by businesses, as they recognise the critical importance of preserving resources and mitigating environmental risks to ensure their long-term success. Currently, it is one of the most prioritised points on the to-do list.

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ENVIRONMENTAL MANAGEMENT

The understanding of environmental management is shifting the business and its activities toward being as ecologically sound as possible. It requires strategic planning, to either rethink and improve already existing business operations or find new and unexplored opportunities. Environmental management includes the constant assessment and monitoring of environmental changes and risks, and how the business impacts such. The requirement then is to make responsible adjustments and decisions, in order to respond to environmental and stakeholder demands.

In particular, blockchain technology can facilitate the tracking of environmental practices, especially in the supply chain. By providing transparency into the origin and journey of products, businesses can build stronger customer relationships. Open communication and honesty are crucial consumer demands of today. This approach incentivises to act more eco-friendly and increases customer awareness of environmental efforts, making it essential for businesses to take action in this area.

USE CASE: WASTE REDUCTION

Decentralised waste management systems through blockchain can be greatly applied to solving the waste crisis within businesses. Currently, there are two aspects of focus:

- Tracking of waste materials
- Recognition scheming

By utilising blockchain technology, businesses can effectively:

- Track and confirm their waste disposal efforts
- Showcase their commitment to sustainability
- Be responsible beyond just measuring the amount of waste produced

This technology also streamlines coordination with waste removal organisations, resulting in improved efficiency and visibility in waste management processes. Furthermore, blockchain's transparency facilitates the quick identification of areas for improvement and bottlenecks, enabling addressing setbacks in a flexible and agile manner.

Blockchain technology also enables incentivisation of environmentally friendly waste disposal practices, such as recycling or composting. This is done by rewarding proper waste disposal with tokens or other digital assets. This approach can be extended to end-consumers, providing an effective way to engage them in the business's sustainability efforts. By involving consumers in such important matters, businesses can influence their decision-making and encourage repurchase behaviour that aligns with their environmental values.

USE CASE: RENEWABLE ENERGY

The independence of fossil fuels is a major step towards making your business more pioneering and sustainable. The exchange of renewable energy can be a catalyst for such, actualised through blockchain technology. Renewable energy can be tracked, traded, and sold. All in a safe and transparent way, whilst simultaneously creating a more efficient and sustainable renewable energy market.

Reasons why investing in renewable energy hold so much value:

- Cost-effectiveness
- Regulation compliance
- Competitive advantage

USE CASE: ENERGY COMMUNITIES

Energy communities represent collaborative networks that allow for the local production, consumption, and sharing of renewable energy amongst members, thereby fostering sustainability and resilience.

In an energy community, participants can install renewable energy sources, such as solar panels or wind turbines, to generate power. The surplus energy produced can be distributed within the network, turning each member not just into a consumer but also into a micro-energy supplier. Blockchain technology underpins this system, facilitating the secure, transparent tracking, and trading of energy transactions. This decentralised approach ensures that energy is consumed where it's produced, which can significantly reduce transmission losses and costs.

The benefits of participating in an energy community are:

- **ENERGY SOVEREIGNTY:** Members have greater control over their energy sources, contributing to energy independence from fossil fuels and large utility providers.

- **ENHANCED SUSTAINABILITY:** By pooling resources and optimising the distribution of renewable energy, communities can achieve a lower carbon footprint and contribute more effectively to climate change mitigation.

- **FINANCIAL INCENTIVES:** Participants can receive monetary benefits from selling excess energy, while also leveraging tax incentives and subsidies where available.

- **SOCIAL COHESION:** Energy communities can strengthen local ties, creating a shared sense of purpose and commitment to sustainable practices.

- **INNOVATION AND LEARNING:** They serve as real-world laboratories for new technologies and business models, facilitating continuous learning and innovation in renewable energy.

For businesses looking to invest in renewable energy, joining or creating an energy community can amplify these benefits. It aligns with regulatory mandates focused on reducing carbon emissions and can provide a competitive edge through leadership in corporate social responsibility. Energy communities are not just an investment in renewable energy but an investment in a sustainable, collaborative future.

USE CASE: CARBON CREDITS & OFFSETS

By funding renewable energy projects or other initiatives that decrease greenhouse gas emissions, organisations can use carbon credits to offset their carbon emissions.

CARBON OFFSETS relate to the compensation of greenhouse emissions produced by the business by purchasing carbon offsets for projects that aim to reduce greenhouse emissions. Projects like such are e.g., the implementation of solar panels for renewable energy sources or reforestation. In general, it can be seen as "offsetting" or evening out the carbon footprint of the organisation by investing in addressing greenhouse emissions.

CARBON CREDITS are the gateway to the incentivisation of a low-carbon economy. Businesses that emit less CO2 through transforming to e.g., solar energy, acquire a certain amount of carbon credits, depending on how far off the company is from what regulations set the benchmark as. These credits can then be traded on the blockchain, for organisations who are also wanting to offset their carbon emissions. As such credits have monetary value, they can create an additional revenue stream for organisations.

Blockchain technology can be a valuable tool in the sale of carbon credits, as it provides a:

- Secure and transparent platform for trading
- Ensures the integrity and verifiability of the credits
- Helps to prevent fraudulent activities

By using blockchain to facilitate the sale of carbon credits, organisations can demonstrate their commitment to environmental sustainability, which is increasingly important for stakeholders and consumers alike. However, it is important to note that while the price may be a consideration in the sale of carbon credits, the primary focus should be on the underlying purpose of reducing carbon emissions and promoting sustainability. Choosing the right carbon offsetting partner, who aligns with values and sustainability philosophy is the initial step to realise the underlying purpose of carbon offsetting.

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04

CHALLENGES

With success comes challenges. Especially within blockchain implementation, there are specific obstacles that must be considered beforehand.

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BARRIERS TO ADOPTION

With blockchain offering a solution to a wide variety of factors, it also brings some barriers:

01   **LACK OF KNOWLEDGE.** Organisations are not willing to undergo the first step to adapt to technological changes. The lack of knowledge leads to uncertainty, whereas blockchain technology actually can mitigate risks on a wide spectrum.

02   **STEEP LEARNING CURVE.** Due to the complexity of blockchain technology, the ease and speed of learning are heavily decreased. Mastering the skills regarding blockchain is time intensive, also because the technology is continuously evolving.

03   **DATA COMPLIANCE.** GDPR regulations are initially designed for a centralised nature. Hence, this is not the case with blockchain. GDPR-compliant public blockchains are possible, but it requires a certain centralised form of control.
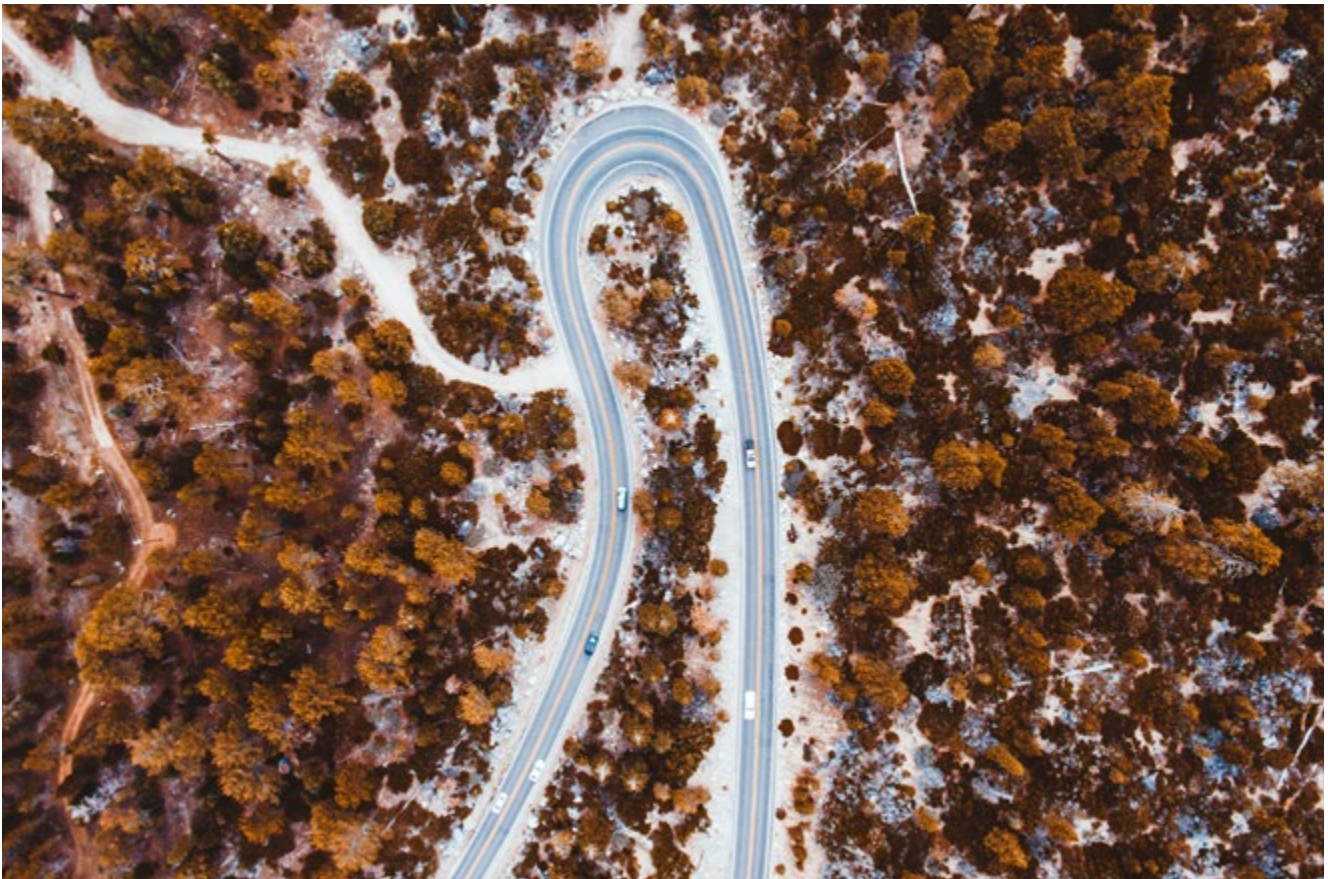
04 **THE CONCEPTION OF BLOCKCHAIN AS A MAJOR ENERGY CONSUMER.**
Blockchain technology has long been associated with high energy
consumption, deterring many businesses from implementing it as a
sustainable solution. However, it is important to note that all technologies
consume energy, including AI, IoT, and web-connected systems. Recent
developments have shown that blockchain can mitigate these externalities
by using reusable or excess energy to mine, or adopting less wasteful
consensus mechanisms. One critical consideration is the choice of consensus
mechanism, which can have a significant impact on energy consumption.
(Delegated) Proof-of-Stake, for example, offers a more environmentally friendly
option compared to Proof-of-Work. However, it's essential to acknowledge
that there are trade-offs to be made when selecting a consensus mechanism,
based on benefit.

05 **COST-EFFICIENCY.** Blockchain has the potential to reduce costs in the long
run, but getting started can be challenging for businesses. Often, companies
may lack the necessary knowledge and must rely on consulting services from
external agencies, which can be costly.

06 **NO STANDARDS (YET).** Standardisation is lacking within blockchain
technology, which can have consequences for cross-industry interoperability.
The benefits of leveraging the technology are hindered, as communication
and collaboration across blockchains can be difficult. However, multi-chain
solutions are gaining in popularity, which can combat the challenge of lower
interoperability.

STRATEGIC IMPERATIVES

The following are strategic imperatives relating to blockchain implementation from a wider point-of-view than sole sustainability:

1. Blockchain as a long-term solution instead of short-term

2. Stay up-to-date with developments

3. Build a community

4. Build a skilled team for implementation and maximised benefit

IMPORTANCE OF KPIs

Often, IT-related metrics are falling into the background, even though they play major roles in business performance. In the following, there are example KPIs that can be taken into account when wanting to measure business performances concentrating on sustainability.

ECONOMIC KPIs

- **The volume of transactions processed per cost unit:** The focus lies on profitability. This KPI measures the monetary value blockchain technology can bring, by measuring the efficiency and the ROI of a blockchain.

- **Direct cost savings:** Being the determining factor of revenue growth, cost savings allow for a quantifiable way to track the sustainability of a blockchain. By monitoring the transactions made within a specific time frame, it is possible to compare associated costs to previous time frames and indicate cost-effectiveness.

- **Budget spent by the project:** By distracting the costs from the budget after and during implementation, it gets clear whether there is room for further investments for future purposes. Additionally, it shows which activities have decreased costs due to using blockchain technology

SOCIAL KPIs

- **Availability of block explorers:** Provides the availability of information access on the blockchain. The higher the availability, the higher the trust, visibility, and verifiability of the blockchain. This all leads to increased transparency within the blockchain ecosystem.

- **Adoption and User evaluations:** The ease of creating an account/key for the blockchain, as well as the usability of a blockchain are determinants for whether they permit the inclusion or not. By focusing on the user-friendliness of the wallet, the rate of adoption and retention is increased, meaning that more are willing to be part of the community.
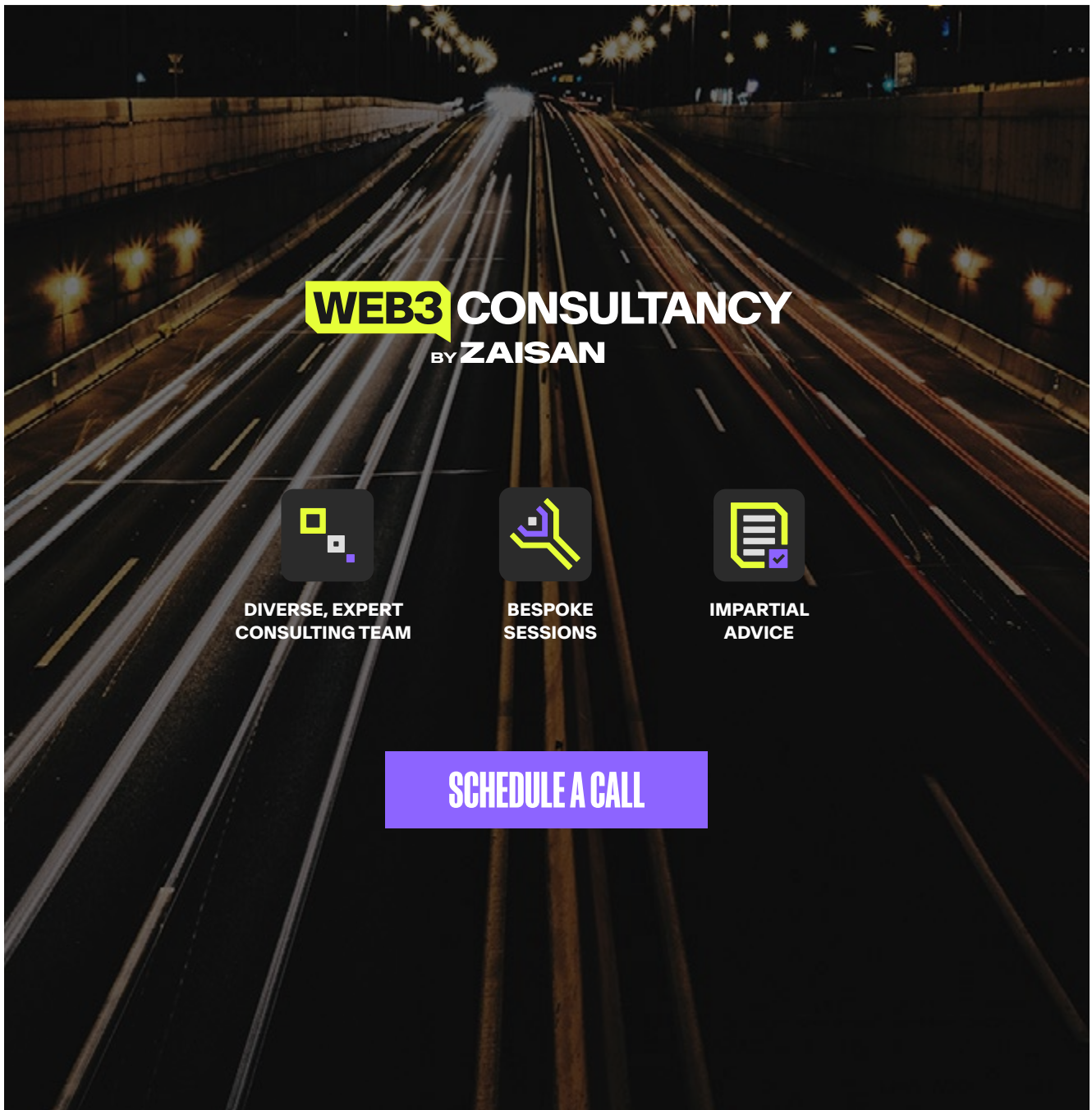
ENVIRONMENTAL KPIs

- **Carbon footprint:** Carbon tracing data for every business activity, transparently stored on the blockchain, authorises a clear representation of the carbon footprint for the organisation. The KPI is helpful when wanting to see whether environmental goals are reached or not and can be compared to others within the field.

- **User behaviour:** The impact your business has on other users of the blockchain, to actively combat greenhouse emissions. Especially, as impact plays a major role in regard to the offsetting of carbon emissions through credits, blockchain technology allows insight into how other users are behaving and how to influence such for the better.

HOW ZAISAN CAN HELP YOU

At Zaisan, we are dedicated to keeping up with the latest developments in blockchain technology, how it impacts sustainability, and providing you with the best support and advice.

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BLOCKCHAIN TECHNOLOGY

Blockchain technology counts as an advanced database mechanism. Data is stored on blocks, which are connected through chains, which allow transactions. Thus the word "block - chain". This explains its decentralised nature, as there is no central point of control. Nodes validate and verify transactions, leading to difficulty when wanting to commute or fraud the ecosystem.
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CIRCULAR ECONOMY

The linear economy is based on the traditional life cycle of creating, using, and disposing of a product, leading to significant waste and an unsustainable assumption of infinite resources. As a result, the linear economy is increasingly viewed negatively. In contrast, the circular economy prioritises reusing products as a primary resource for product creation. By doing so, businesses can recycle waste sustainably while recognizing the limitations of resources.
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CONSENSUS MECHANISM

Consensus mechanism provides the guarantee of agreement among the participants on the blockchain. PoS (Proof-of-Stake) and PoW (Proof-of-Work) are different consensus protocols on the blockchain.
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DAO

DAOs, or Decentralised Autonomous Organisations, are unique organisations that operate without any centralised control. Instead, they are open-sourced and led by shareholders, making them bottom-up organisations. With smart contracts running on the blockchain, transactions can be verified without the need for a central authority. This disintermediation enables DAOs to operate in a decentralised and transparent manner. Community governance is essential to DAOs, as members collectively make decisions on the direction of the organisation.
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GLOSSARY

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GLOSSARY

DOUGHNUT ECONOMY

The doughnut economy framework offers a modern perspective on the current economic model, emphasising sustainability as a critical factor for business success. The framework presents a balanced economic model, where the outer borders signify the ecological and social limits, and the hole represents the shortfallings in basic needs such as healthcare access, energy, and social infrastructures. The outer layer of the doughnut represents planetary boundaries, primarily the environmental impact. By embracing the doughnut economy model, businesses can achieve economic sustainability while also promoting social and environmental responsibility.
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SMART CONTRACT

Smart contracts are self-executing programs that operate on a distributed ledger, using "if-when" cues to trigger specific actions based on predetermined circumstances. These programs can also store data, such as the number of tokens owned by a user, within the contract. Once a smart contract is deployed on the blockchain, it becomes immutable, meaning that the terms of the agreement cannot be changed. Smart contracts eliminate the risk of errors and mistakes that are common in paper-based processes, and their use can help streamline operations and improve efficiency.
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TRIPLE-ENTRY ACCOUNTING

Triple-entry accounting stems from its antecedents single-, and double-entry accounting, and is expected to disrupt the accounting sector. The role blockchain plays in triple-entry accounting is the possibility of distributing multiple records/receipts across multiple parties.
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