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How blockchain provides confidence in ESG reporting to accelerate Sustainability Transformation (SX)

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The strategic imperative of ESG

Today, talk of ESG is ubiquitous around the boardroom table. It holds great significance for everyone, from investors and governments, to customers and employees. Research recently conducted by Fujitsu[1] has shown that the sustainability element of ESG is the number one priority for 70% of business leaders. That's because effective sustainability initiatives can attract investment, support expansion, and help improve a business' image. It shows that contributing to the greater good doesn't mean sacrificing profits. They can work in harmony.

But less than two decades ago, the term ESG did not exist. It's been a rapid rise for a concept that many still find confusing. **"When you talk about ESG, not everyone understands what it means,"** explains Marcos Carrera, Head of Blockchain and Web 3.0 Iberia at Fujitsu. **"It's about impact. It's about the three P's impact – planet, people and prosperity, while a fourth P – profit – can benefit too. Amazingly some people still think ESG isn't about financial profit. But our research has shown that the businesses most actively working on sustainability transformation, changemakers as we call them, are more likely to see profit growth than those that are not. It shows that finding a balance between economic development, sustainability and ethical governance is the best way to profit. Above all, ESG is critical for customers. Fostering a commitment to ESG is now a cornerstone for staying ahead in the industry."**

ESG defined

The acronym was first mentioned in 2004 when a United Nations report included a note about the need for "better inclusion of Environmental, Social and Corporate Governance (ESG) factors in investment decisions".[2] Today, it's a framework used to assess an organization's business practices and performance on various sustainability and ethical issues.

As well as the recruitment advantage, there are other benefits too. Vanessa Santos, Head of Marketing at the Fujitsu Enterprise Blockchain Track and Trust Solution Center, says, **"ESG is a strategic imperative that aligns with broader social expectations and contributes to building resilient businesses. Organizations can create sustainable value, reputation, operational efficiency, cost saving and resilience too. We also have employee engagement, customer loyalty, and stakeholder trust. And there are opportunities to collaborate on strategic partnerships with other stakeholders"** but there isn't a one-size-fits-all approach, she adds, "just setting increasingly ambitious goals may not drive the improvements required. Sustainability strategies must be authentic and aligned with the wider business goals. Otherwise, they can backfire or lead to accusations of greenwashing. And accurately measuring and demonstrating impact is growing increasingly challenging for organizations of every sector, just at the time when regulators are escalating calls for them to do so."

"*ESG is a strategic imperative that aligns with broader social expectations and contributes to building resilient businesses.* - Vanessa Santos"

[1] Based on a Fujitsu survey of 600 C-suite executives in 15 countries on their attitudes toward sustainability management. The responses were captured in November and December 2023 with a full report published in April 2024.
[2] https://www.ft.com/content/5ec1dfcf-eea3-42af-aea2-19d739ef8a55

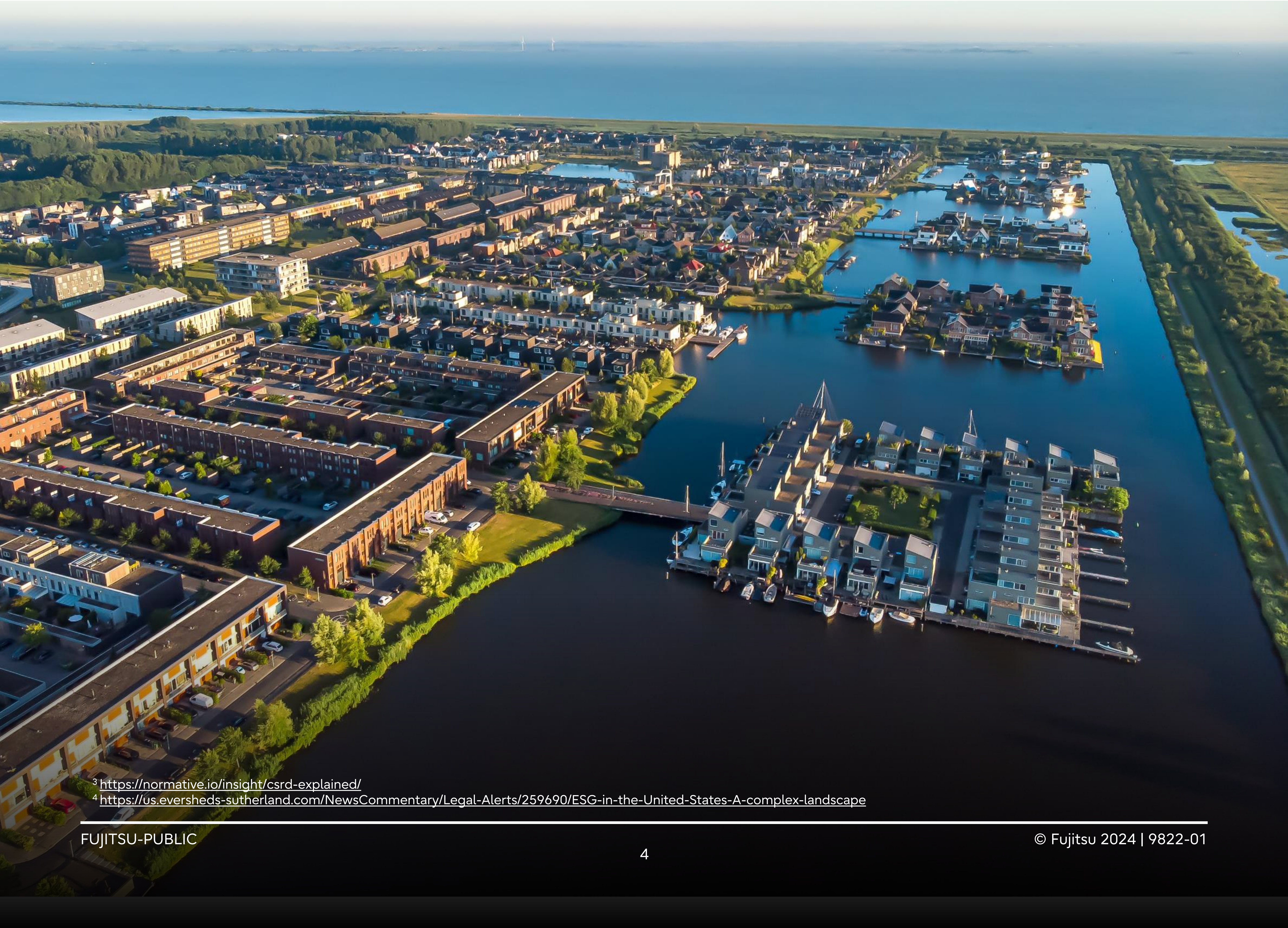
The pressure to comply

Sustainable business practices were given a boost in Europe in 2022, with the establishment of the EU's Corporate Sustainability Reporting Directive (CSRD)[3]. Companies meeting two of three conditions – €50m in net turnover, €25m in assets, and 250 or more employees – will need to report on their climate and environmental impact between 2024 and 2028 (as the phased rules go into effect).

Elsewhere, the UK also has its own Sustainability Disclosure Requirements (SDR) for financial institutions and the Streamlined Energy and Carbon Reporting (SECR) directive, to encourage more companies to adopt energy-efficient actions. The US is in the process of transitioning ESG disclosure from voluntary reporting to a regulatory-driven scheme, led by the US Securities and Exchange Commission (SEC)[4].

Legislators want to encourage businesses to adopt more sustainable practices. But complying with those requirements isn't without its challenges. As a framework, ESG covers a broad range of business practices and performance – from energy usage, climate change strategy and waste reduction (environmental); and fair pay, equal employment opportunities, and responsible supply chain partnerships (social); to risk management, ethical business practices, and accounting integrity and transparency (governance).

Faced with such a long list, many businesses don't know where to start. Benchmarks have a wide spectrum of variables, with no universal standardization. It's difficult to know what to measure or how to track data in a reliable way. There are other obstacles too. Vanessa Santos acknowledges **"Companies have a lot of challenges regarding reporting, data availability, and the quality of data, of course, materiality, integration with business strategy, and stakeholder engagement. There can also be regulatory complexity, and a lack of expertise."**



[3] https://normative.io/insight/csrd-explained/
[4] https://us.eversheds-sutherland.com/NewsCommentary/Legal-Alerts/259690/ESG-in-the-United-States-A-complex-landscape

The consequences of non-compliance can be substantial. The SEC, for example, has been known to issue fines exceeding $1.5m.[5] In the EU, companies that fail to report and comply with the CSRD face fines of up to €10m or 5% of their annual revenue. Companies also face the prospect of reputational damage, lawsuits, and the loss of contracts, which require robust ESG reporting as part of the tender. And while legislators are attempting to help by establishing the International Sustainability Standards Board (ISSB) and defining terms around environmental data, a global standard for sustainability reporting is still a pipe dream.[6]

When companies report on their efforts to reduce their carbon emissions, they'll often refer to scopes 1, 2 and 3.

Scope 1

Direct emissions that are owned or controlled by a company, such as burning fuel in a fleet of vehicles.

Scope 2

Emissions caused indirectly by companies because of the energy it purchases and uses, such as the gas or electricity used to power buildings.

Scope 3

Emissions that a company is indirectly responsible for in its wider value chain, including when it buys products from its suppliers.

Enter blockchain, a machine for transparency

The launch of Bitcoin cryptocurrency in 2009 may have been the first time most had heard of blockchain, but its transparency, traceability, automation and decentralization makes it useful for enterprises in a variety of ways.

A blockchain is a distributed database or ledger that stores information via locks linked together via cryptography. Different types of information can be stored on a blockchain, but the most common use for transactions has been as a ledger. The technology is also known for its crucial role in cryptocurrency systems. In Bitcoin's case, the blockchain is decentralized so all users collectively retain control. The data entered is also irreversible, permanently recorded and viewable by everyone.

There are some interesting applications already starting to emerge. The World Bank, for example, has been trialing a system, using the Chia Blockchain platform, to support the reporting of emissions reduction projects and the trading of carbon offsets.[7] The healthcare sector could use blockchain to facilitate the secure transfer of patient medical records or help researchers unlock genetic code.[8] And the insurance sector, companies are already using smart contracts powered by blockchain to offer insurance against delayed flights.[9]

In the case of ESG reporting, blockchain brings accuracy, transparency and integrity into the process. The technology provides immutable certification and facilitates the automated reporting of any number of data points that relate to ESG tracking, such as carbon emissions and credits, or tracing products and labor conditions along the supply chain. Those metrics can then be benchmarked alongside goals set by a company, or a regulator.

[5] https://www.sec.gov/news/press-release/2022-86
[6] https://makersite.io/insights/sustainability-reporting-us/
[7] https://www.reuters.com/business/environment/exclusive-world-banks-ifc-taps-blockchain-carbon-offsets-2022-08-17
[8] https://builtin.com/blockchain/blockchain-healthcare-applications-companies
[9] https://www.axa.com/en/magazine/axa-goes-blockchain-with-fizzy

Transparency builds trust. For this reason, Blockchain has been called the "trust machine", and it's something that is gravely needed in the modern corporate landscape, Marcos Carrera says. **"We have a global crisis about trust. We don't believe our governments, we don't believe companies, events in the news, or centralized data. Blockchain can bridge that gap. And by inspiring trust in the data, you can create a very different relationship with your value chain. You can start working with your customers and providers under a trust environment and share your value around an ESG goal."**

The data is stored in a tamper-proof way, and stakeholders along the value chain can see the record and changes of ownership. Human supervision is not required, which reduces errors and verifies the legitimacy of the data and transactions executed. It also lowers transaction costs and counteracts greenwashing because records can be independently verified by regulators and other third parties.

> *Blockchain has been called the 'trust machine', and it's something that is gravely needed in the modern corporate landscape.* – Marcos Carrera

Using blockchain in this way should go some way towards tackling skepticism around ESG, which is limiting progress. In 2020, the European Commission ran a research project to identify instances of greenwashing. They found 42% of green claims were exaggerated, false or deceptive.[10] And in 2022, a poll for Google Cloud found 58% of C-suite and VP-level executives said their company has engaged in greenwashing, jumping to 72% for companies in North America.[11]

At an investment level, 85% of asset managers say ESG is a high priority for their companies but almost two-thirds (64%) are concerned about a lack of transparency and corporate disclosure around ESG activities.[12] With blockchain, that mistrust and uncertainty can finally be addressed.

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[10] https://greenbusinessbureau.com/green-practices/what-is-greenwashing-and-how-to-spot-it/
[11] https://cloud.google.com/blog/topics/sustainability/new-survey-reveals-executives-views-about-sustainability
[12] https://www.businesswire.com/news/home/20210712005172/en/Index-Industry-Association-Survey-Finds-Better-Corporate-Data-Needed-for-Asset-Managers-to-Offer-Better-ESG-Investment-Products

A new era for business impact

As we have discussed before, there's so much more to ESG and blockchain than simply compliance. It is also creating new opportunities around impact. After all, committing to ESG shouldn't be just about ticking a regulatory box. Operating more sustainably can unlock significant value. At a macroeconomic level, it's estimated that putting the United Nations Sustainable Development Goals (SDGs) at the center of the world's economic strategy could unlock $12 trillion a year in opportunities by 2030 and generate 380 million jobs.[13]

For organizations themselves, sustainability impacts the bottom line by improving risk management, increasing cost savings and efficiency, enhancing brand reputation, attracting talent, and widening access to capital. Fujitsu research has found that businesses actively working on their sustainability programs and ESG have seen a 5% revenue rise over the last 12 months.[14]

Alongside this financial success, blockchain also opens up new business models and markets that couldn't previously exist, Marcos Carrera says. **"Blockchain is creating a new market. This is an amazing opportunity for any company that wants to build a new product or service. And your competitive advantage won't be about price. It'll be a matter of value and impact."**

By leveraging data-driven insights through blockchain, companies can prioritize and allocate resources to enhance decision making, identify areas for improvement, and allocate resources more effectively, while driving innovation. It offers a way to securely collaborate with multiple stakeholders in a more transparent and decentralized manner, creating ecosystem thinking with matrix value chains. A truly interconnected model based on co-creation allows businesses to adapt more swiftly to the dynamic nature of a modern-day market and build resilience for the future.

There are also opportunities to explore new technologies, such as Web 3.0, the Internet of Things (IoT), intelligent automation, and Regenerative Finance (ReFi), Carrera adds. **"When you have real trustworthy data you can create a new process with AI, quantum computing, for example, or you can use blockchain for cybersecurity. But you can also go a step up and create engagement with tokenomics. You are going to have more transparency, more automation of projects with smart contracts. It'll be an altogether smarter ecosystem in a smarter market."**

The role of distributed ledger technology and ecosystem thinking

Distributed ledger technology (DLT) and ecosystem thinking can support ESG and sustainability efforts by enabling enhanced traceability and transparency, fostering decentralized collaboration, facilitating matrix value chains and promoting stakeholder engagement and empowerment. **Read more about the benefits here.**

[13] https://www.wbcsd.org/Overview/News-Insights/General/News/Achieving-the-Sustainable-Development-Goals-can-unlock-trillions-in-new-market-value.

[14] Based on a Fujitsu survey of 600 C-suite executives in 15 countries on their attitudes toward sustainability management. The responses were captured in November and December 2023 with a full report published in April 2024.

What are the UN Sustainable Development Goals (SDGs)?

The SDGs were agreed by the United Nations in 2015 to create a set of universal goals that meet the urgent environmental, political and economic challenges facing the world. There are 17, including:

Working with a trusted partner

Blockchain technology offers limitless opportunities to add value, improve efficiencies and explore new business models. But incorporating it isn't always straightforward. There are still misconceptions and misunderstandings about the technology, even among experienced leaders. It cannot, for example, help businesses determine what kind of data to collect, measure or verify. Rather, it is an enabler to make the process more efficient.

Marcos Carrera says: "Like most solutions dependent on data, blockchain also has a 'garbage in, garbage out' problem, and there may be times when another solution is more effective. It's also a space that's moving so fast, it's easy to feel like you're being left behind. Working with an experienced partner helps to address these obstacles and focus on the business need, rather than blockchain itself. **You need to understand the real use cases and the technology behind them. Sometimes it won't be appropriate to use blockchain. Where it is, we would usually recommend businesses start with something very simple and user friendly. Blockchain should do all the work in the background."**

Vanessa Santos agrees: **"It's important to have a clear understanding of the challenge the company is facing. The technology is just something that helps us support customers to solve real challenges in their business."**

Fujitsu has been globally active in blockchain technology since 2015 when it was an early member of the open-source Hyperledger project, which aims to develop stable frameworks for enterprise-grade blockchain deployments.[15] The company has also won several international awards for its work, including best blockchain project in sustainability (with Botanical Water) at the Alastria Blockchain Awards, and divulgation in innovation, digital assets and fintech at the II Financial Innovation Awards in Spain, received by Marcos Carrera. The team has credible, real-world blockchain expertise and uses an agnostic approach to technology and implementation, taking the unique nature of a client's business, organization and ecosystem into account.

[15] https://www.fujitsu.com/us/imagesgig5/6_Panel_3-1_Hart_Montgomery.pdf

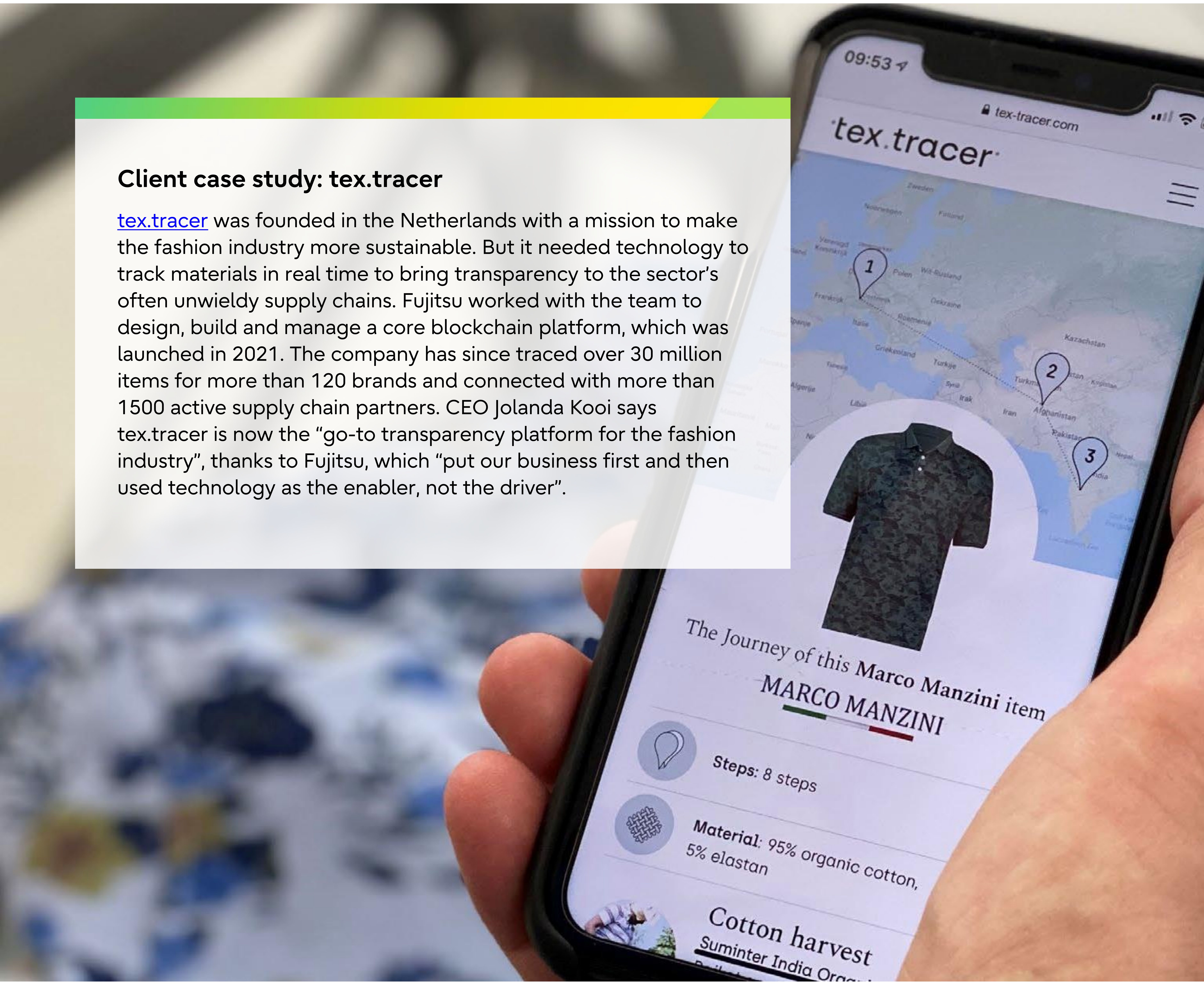
In order to help organizations make the most of blockchain, it's important to identify the areas of ESG, as well as wider business challenges that would benefit. Fujitsu Track and Trust digital ledger technology, for example, helps organizations reimagine security, traceability and finality in their operations. It brings a trusted point of validation across production, supply, distribution and sales networks, and provides a tamper-proof way of verifying an item's credentials throughout its lifespan.

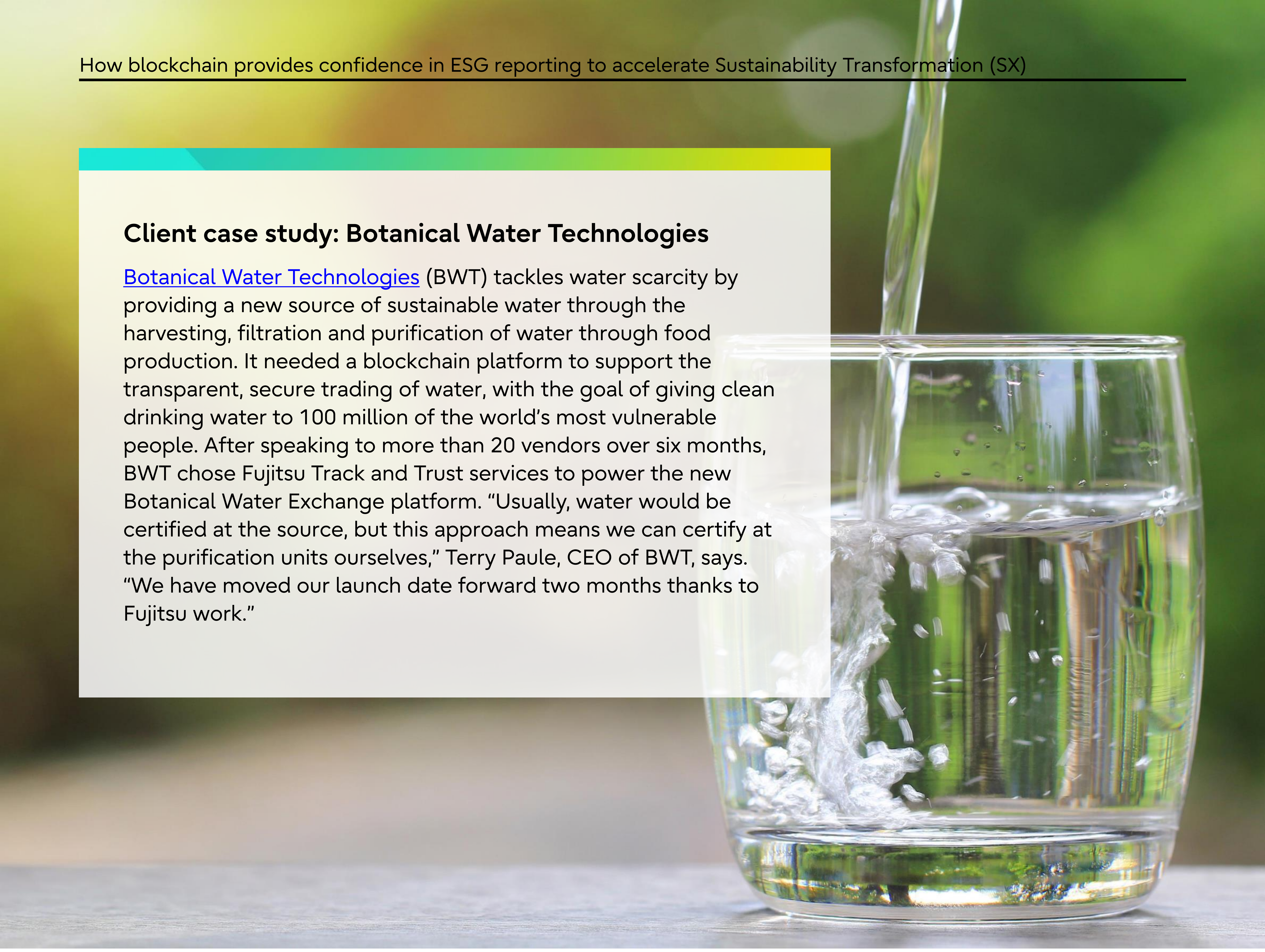
Fujitsu continues to foster business value for customers, leveraging blockchain solutions that bring sustainability transformation to life. This realization of outcomes for customers is what drives us to commit ongoing investment in this space.

By investing in a holistic approach, business leaders can make sustainability and responsibility an integral part of their core business, based on trusted data and stakeholder engagement. CSRD compliance is assured, new and existing systems are connected throughout the value chain, and performance can be established and tracked against KPIs. **"It's by achieving that sort of visibility, that organizations can discover extra strategic value",** Santos adds.

Client case study: tex.tracer

tex.tracer was founded in the Netherlands with a mission to make the fashion industry more sustainable. But it needed technology to track materials in real time to bring transparency to the sector's often unwieldy supply chains. Fujitsu worked with the team to design, build and manage a core blockchain platform, which was launched in 2021. The company has since traced over 30 million items for more than 120 brands and connected with more than 1500 active supply chain partners. CEO Jolanda Kooi says tex.tracer is now the "go-to transparency platform for the fashion industry", thanks to Fujitsu, which "put our business first and then used technology as the enabler, not the driver".





Client case study: Botanical Water Technologies

Botanical Water Technologies (BWT) tackles water scarcity by providing a new source of sustainable water through the harvesting, filtration and purification of water through food production. It needed a blockchain platform to support the transparent, secure trading of water, with the goal of giving clean drinking water to 100 million of the world's most vulnerable people. After speaking to more than 20 vendors over six months, BWT chose Fujitsu Track and Trust services to power the new Botanical Water Exchange platform. "Usually, water would be certified at the source, but this approach means we can certify at the purification units ourselves," Terry Paule, CEO of BWT, says. "We have moved our launch date forward two months thanks to Fujitsu work."

Powering a sustainable future with blockchain

The potential for blockchain has not yet been fully realized. We are only just scraping the surface of what can be achieved in the future. As blockchain technology matures, it will be possible to embed more complex logic into transactions and the validated on-chain. Gartner has estimated that by 2025, the business value added by blockchain will grow to more than $176bn, surging to exceed $3.1 trillion by 2030.[16]

Blockchain will power a new financial ecosystem centered around impact, ESG and digital finances, Marcos Carrera says. But blockchain itself isn't a silver bullet. Rather, by providing supply chain transparency, data security, and reducing costs, blockchain has the real potential to revolutionize the way we do business. **"We need to think out of the box to create new business models. This is the age of a new value proposal,"** he adds.

One thing is for sure, Vanessa Santos says: **"ESG integration is not optional. It's an opportunity. We need new ideas to save the world. But we also need them to be stable, reliable, provable, and able to scale fast. And that's only achievable with blockchain."**

After all, ESG is more than just an ethical imperative. Our research has shown that it is already critical to success, for everything from share prices to customer and staff satisfaction.

[16] https://www.gartner.com/en/doc/3855708-digital-disruption-profile-blockchains-radical-promise-spans-business-and-society

Our contributors

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Marcos is an industrial engineer with a MBA and several executive programs on technology, leadership and sustainability to his name. He is EFA, ESG and LEED certified, and can talk the language of business and technology at the same time.

Vanessa Santos
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With more than 15 years' experience, Vanessa has a wealth of knowledge across digital transformation and emerging technologies. In her current role at the Fujitsu Enterprise Blockchain Track and Trust Solution Center, Vanessa aims to contribute to a more sustainable world by championing blockchain technology as a driver of innovation.

To explore more about ESG, blockchain and Sustainability Transformation, you may also be interested in reading:

- Bridging the Gap: ESG Reporting Driving Impactful Business Model
- Beyond Numbers: ESG Reporting as the Key to Agile and Sustainable Enterprises
- The route to credible sustainability
- The rise of accountability: The Credible Way to become a Sustainable Enterprise
- What happens when ESG, Data and Technology Converge: A New Path to Sustainable Business?
- Unleash data, ignite change: Your guide to empowering Sustainability Transformation (SX) with Digital Shifts

To learn how Fujitsu can help your ESG and blockchain ambitions, get in touch:

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