



Sustainable Manufacturing in the digital age

A blueprint for transformation



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An aerial photograph of a modern city with a mix of residential and commercial buildings, green spaces, and a river. The image is used as a background for the document. The top part shows a dense urban area with a river winding through it. The middle part shows a large green field with a path and a river. The bottom part shows a green field with a path and a river.

Rising to modern industry challenges

The manufacturing sector is navigating a complex terrain shaped by external challenges including climate disruptions, geopolitical tensions, and financial uncertainties. Instead of perceiving these challenges merely as obstacles, it's crucial to reframe them as drivers of innovation. Embracing sustainability in its most comprehensive form – encompassing economic, social, and environmental facets – offers a path to harmonize these benefits. By prioritizing this holistic approach to sustainability, the manufacturing sector can transform these challenges into opportunities for growth and resilience.

Sustainability is no longer a mere corporate buzzword; it has become a critical priority in management. Gartner's 2023 CEO Survey indicates that Environmental, Social, and Governance (ESG) initiatives are seeing a significant uptick in investments, ranking as the second-highest area for increased funding between 2022 and 2023, with a notable 69% rise.



The corporate landscape is undergoing a significant transformation, with organizations increasingly prioritizing long-term viability and sustainability alongside traditional metrics of return on investment (ROI). In this evolving context, sustainability is recognized not just as a moral imperative but as a strategic necessity that accelerates business outcomes. This shift emphasizes the role of sustainability in enhancing product and operational excellence, as well as in building customer trust and improving the customer experience. Organizations are finding that integrating sustainable practices into their operations not only fulfills ethical obligations but also drives tangible improvements in various aspects of their business.

This directly impacts manufacturers as extreme weather events, fueled by climate disruptions, are affecting manufacturing operations. From rising temperatures slowing down production speeds to adverse

weather conditions causing supply chain delays, manufacturers are grappling with the tangible consequences of environmental instability. Consequently, sustainability is not solely about minimizing a carbon footprint but is equally concerned with integrating resilient and adaptive solutions to ensure operational continuity.

As we look to the future, tomorrow's leaders need to strategically embrace sustainability, moving beyond traditional views that confine it to areas like customer relations, product development, or competitive positioning. A comprehensive focus on sustainability should be intricately integrated into the core of a company's operations. This approach requires a deep awareness of the manufacturing sector's extensive impact on both society and the environment, ensuring that every aspect of business activity is aligned with sustainable practices.



The state of sustainability in modern manufacturing

The necessity for sustainable solutions in global manufacturing has reached an unprecedented level, with businesses increasingly cognizant of the profound impact transformation could have on their operations. This escalating demand for sustainability is emphasized in a variety of different factors.



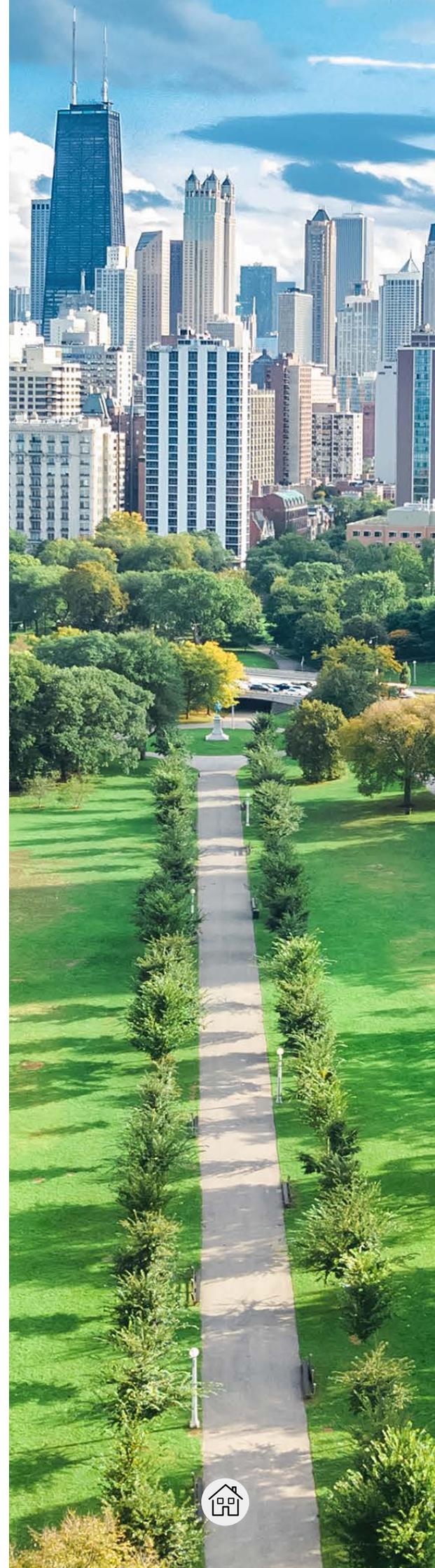
1. Climate change impact on business models and C-suite attitudes

According to Deloitte's [2023 CxO Sustainability Report](#), the impact of climate change on business models is increasingly recognized by top executives. The study, which surveyed over 2,000 CxOs across 24 countries, reveals that a majority remain optimistic about the world's capability to mitigate the worst impacts of climate change and feel an urgency to act. When ranking the most pressing issues, many placed climate change among the top three, surpassed only slightly by economic outlook. Notably, 61% of these executives believe climate change will have a significant impact on their organization's strategy and operations in the next three years.

This shift in priority is mirrored in actions taken by companies. The report indicates that 75% of organizations have increased their investments in sustainability over the past year. These investments include using more sustainable materials, enhancing energy efficiency, training employees on climate action, and developing new climate-friendly products. However, the report also highlights a gap in fully embedding climate considerations into corporate culture, with only 29% of CxOs believing the private sector is "very" serious about addressing climate change.

2. Prioritization of sustainability

This prioritization was further displayed through a [survey commissioned by Fujitsu](#) which provides insights into the importance of sustainability for manufacturing organizations. Nearly 70% of companies are now actively prioritizing sustainability initiatives, recognizing it as a crucial component of their strategic agenda.



3. Overlap between digital transformation and sustainability

The survey also highlighted a compelling overlap between digital transformation and sustainability initiatives, emphasizing the symbiotic relationship of technological advancements and sustainable practices. Here it was uncovered that:

1. Transformation is leading to enhanced products and services

76% of leaders are leveraging data and digital technologies to drive innovation in products and services. This utilization is propelling businesses towards offering more advanced and customer-centric offerings.



2. Data as a catalyst for innovation

74% of leaders believe that digital transformation is instrumental in achieving sustainability objectives. They acknowledge that leveraging data and digital tools is crucial in driving innovative and sustainable solutions.

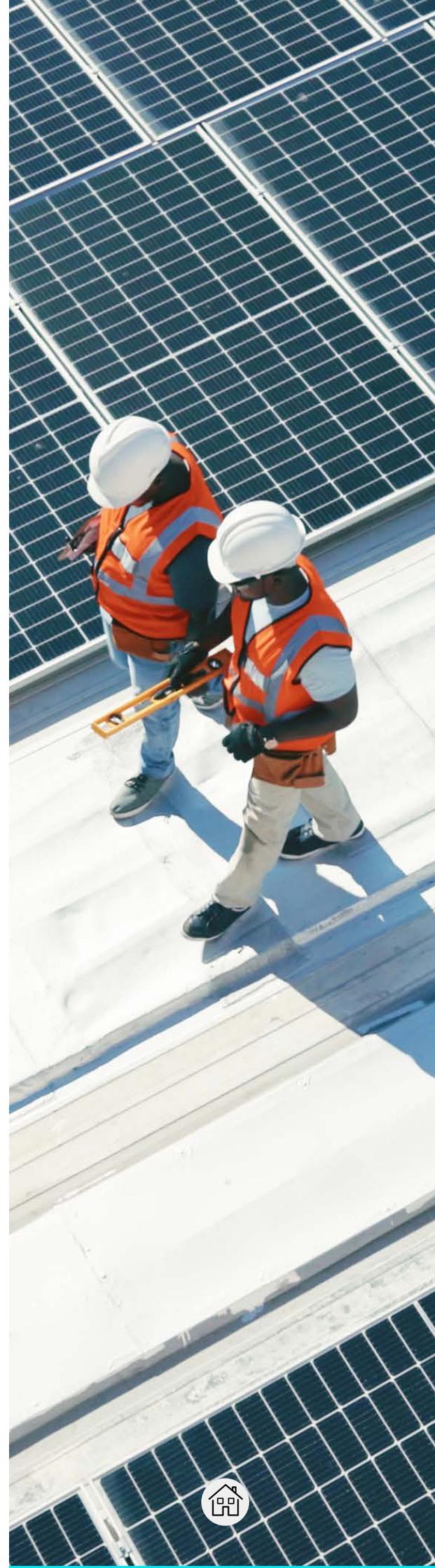


3. Sustainable transformation is an integral part of core business operations

74% of leaders are digitally transforming their processes for the creation of products and services. This transformation is not just about efficiency; it focuses on incorporating sustainable practices as an essential part of core business operations.



These statistics collectively underscore the undeniable link between the current state of global manufacturing, the impacts of climate change, and the strategic imperative for sustainability. As manufacturers navigate this landscape, the data presented here serves as a crucial foundation for understanding the intersection of business operations, sustainability goals, and the transformative power of digital technologies.



A holistic approach to sustainability

For business leaders, sustainability has become a Gordian Knot that is difficult to disentangle and even more difficult to strategize for. The global business environment has already begun to see significant change, but digital transformation and digital solutions offer a way to untangle these complex webs.

In navigating towards sustainable business practices, it's essential to adopt a bimodal approach that combines both conventional incremental (inside-out/bottom-up) methods and the more expansive outside-in/top-down approach characteristic of sustainability. This strategy allows organizations not only to implement change effectively but also to build a resilient digital foundation that accommodates future updates and adaptations. Recognizing the interconnectedness of critical challenges enables the creation of a comprehensive framework that simultaneously addresses the environmental, social, and economic aspects of sustainability. Such a bimodal approach ensures that while immediate, short-term efficiency improvements are realized, the broader, long-term vision of sustainability is not lost.

In the environmental domain, attention goes well beyond managing carbon footprints. It includes embracing responsible production and consumption, advancing clean energy initiatives, and exploring sustainable economic development pathways. Organizations are required to navigate the complex relationship between industry, innovation, and infrastructure, acknowledging how these elements critically influence sustainable business practices. By adopting this wider view, companies are equipped not just to comply with existing environmental standards but also to strategically position themselves in a landscape characterized by rapidly changing expectations and demands.





Utilizing sustainable practices for economic benefits

Social sustainability demands a nuanced understanding that goes beyond superficial metrics. Quality of life, equality, diversity, social cohesion, and governance represent interconnected elements that must be considered in unison. By addressing these social dimensions collectively, organizations can foster a sense of purpose and responsibility that resonates both internally and externally, laying the groundwork for sustained societal impact as well as business growth.

Economic sustainability, in the wider scope of business operations, calls for a thorough assessment not only of supply chains but also of products, assets, partners, and industry practices and standards. This comprehensive approach ensures a deeper understanding and responsible management of all facets contributing to a business's sustainability journey.

Responsible product design, sourcing, production, and consumption are fundamental to economic sustainability, highlighting the importance of ethical considerations across all aspects of the value chain. Integrating these economic dimensions with environmental and social factors, organizations can develop an ecosystem of sustainable solutions, supplies, and partnerships. This means that each element of the value chain – from the initial design and sourcing of products to their production and eventual consumption – mutually reinforces and supports sustainable practices.

By embracing this comprehensive approach, organizations not only fulfil immediate sustainability goals but also position themselves as pioneers in a continually evolving landscape of responsible business practices as well as technological leaders.



Fujitsu: 5 pillars of Sustainable Manufacturing

Starting a holistic digital transformation journey in manufacturing can seem daunting, but Fujitsu offers a blueprint centered around five key pillars that can make the process seamless, collaborative and effective. These include:

1. Enterprise Visualization

Given the rapid technological advancements and evolving market dynamics, staying ahead requires clarity, precision, and foresight. The Enterprise Visualization solutions by Fujitsu bridge the gap between data and actionable insights. Under this pillar, complex manufacturing processes are simplified, ensuring that every decision an organization makes is well-informed, timely, and strategic.

2. People Enablement

The future of manufacturing isn't just shaped by machinery and technology; it's driven by people. The People Enablement approach by Fujitsu offers a strategy that empowers teams with the skills, tools, and insights they need to lead in the next wave of manufacturing.

3. Resilient Supply Chain

Today's supply chains face a myriad of challenges, from global disruptions to changing regulations and demand patterns. The Resilient Supply Chain framework of Fujitsu ensures that organizations are not just responsive, but robust and ready for the unknown.

4. Value Chain Optimization

With the Fujitsu holistic approach to Value Chain Optimization, manufacturers can uncover hidden opportunities, drive operational excellence, and deliver unparalleled value to their stakeholders across the entire value chain.

5. Carbon Neutrality

As heightened environmental awareness and increasing regulatory pressures take hold, achieving carbon neutrality, or even surpassing it to become "carbon positive", is no longer a distant aspiration for manufacturers. With Fujitsu at the forefront of this transformation, customers can significantly reduce the carbon footprint of their manufacturing operations and help make carbon neutrality a reality.



Fujitsu Vision: How we are pushing forward the sustainability agenda

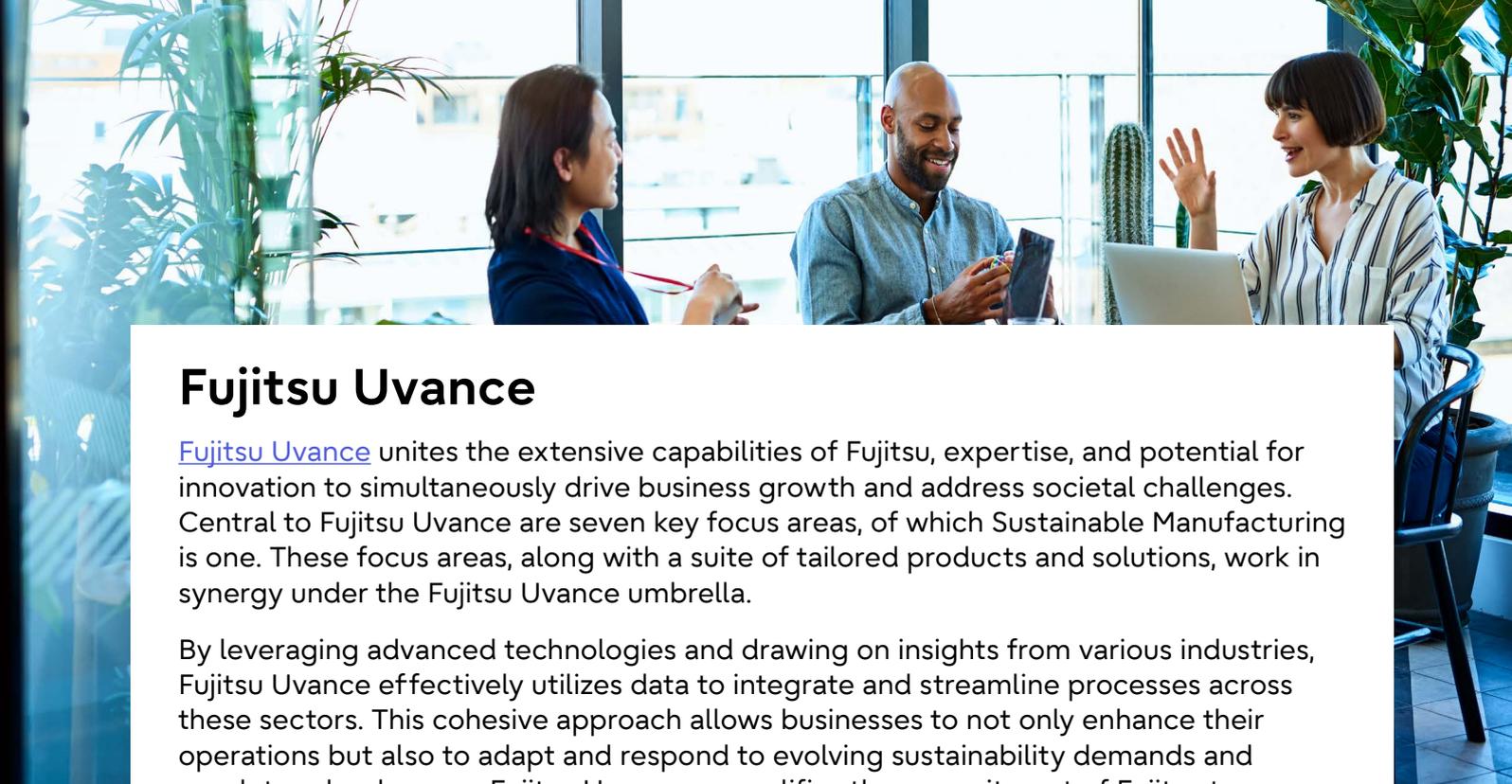
The target year for achieving the [United Nations' Sustainable Development Goals](#) (SDGs) is 2030. At Fujitsu, the future we envision aligns with these SDGs – where people, regions, organizations, and technologies are connected, and innovation thrives. However, no single organization or industry can solve this issue alone, it's about building an ecosystem that promotes greater collaboration between governments, companies and individuals.

Fujitsu actively positions itself as a catalyst within this ecosystem, offering advanced technological solutions and platforms that empower stakeholders to unite their efforts more effectively.

By leveraging our expertise in digital innovation, we facilitate the sharing of knowledge, resources, and best practices among diverse partners.

Our role extends beyond providing technological solutions; we are dedicated to creating an environment where collaborative projects and initiatives can thrive, directly contributing to the SDGs. Through this supportive framework, Fujitsu not only aids in addressing global challenges but also encourages the creation of sustainable, value-driven innovations that benefit society as a whole.





Fujitsu Uvance

[Fujitsu Uvance](#) unites the extensive capabilities of Fujitsu, expertise, and potential for innovation to simultaneously drive business growth and address societal challenges. Central to Fujitsu Uvance are seven key focus areas, of which Sustainable Manufacturing is one. These focus areas, along with a suite of tailored products and solutions, work in synergy under the Fujitsu Uvance umbrella.

By leveraging advanced technologies and drawing on insights from various industries, Fujitsu Uvance effectively utilizes data to integrate and streamline processes across these sectors. This cohesive approach allows businesses to not only enhance their operations but also to adapt and respond to evolving sustainability demands and regulatory landscapes. Fujitsu Uvance exemplifies the commitment of Fujitsu to connecting technology with human-centric innovation, enabling businesses to step forward on a transformative journey towards sustainability while maintaining their competitive edge.

Our lasting commitment to sustainability

In the fabric of the corporate culture of Fujitsu, sustainability and environmental consciousness are not just aspirations but intrinsic values that have been fostered since our inception. From the way operations are conducted to the solutions customers receive, there remains a profound awareness and engagement with sustainability which are foundational to our organizational ethos.

This commitment extends beyond internal practices to a strategic alignment with global sustainability imperatives. We recognize the instrumental role that partnerships play in achieving ambitious goals such as the UN SDGs and carbon neutrality targets. Collaborating with an extensive ecosystem of technology partners, academic and research institutes, and major sustainability stakeholder organizations is at the heart of our approach.

By engaging with a diverse network of partners, we not only leverage collective expertise and resources for sustainable innovation but also maintain a parallel focus on business growth.

This collaborative ecosystem enables us to approach complex challenges with a multi-faceted strategy, aiming for solutions that not only contribute to global sustainability objectives but also drive business success. While pursuing these goals, we recognize that achieving optimal outcomes may require businesses and consumers in various sub-industries to adapt. However, our aim is to balance these adjustments with opportunities for growth, ensuring that strides in sustainability also translate into tangible business benefits.

Our commitment to sustainability extends beyond corporate responsibility; it represents a collaborative journey we undertake with our partners, customers, and stakeholders. This collective dedication to environmental stewardship is unwavering, and our collaborations are a powerful demonstration of the significant impact achievable when diverse organizations come together for a shared purpose.



Supporting net zero targets

The Fujitsu journey towards achieving net-zero targets involves a comprehensive transformation that extends beyond cultural shifts to include specific, actionable strategies. While fostering a sustainability-minded culture within our organization and among our partners is crucial, we also focus on tangible areas of action to make this goal a reality.



Optimizing product designs with sustainability KPIs

The Fujitsu journey towards achieving net-zero targets involves a comprehensive transformation that extends beyond cultural shifts to include specific, actionable strategies. While fostering a sustainability-minded culture within our organization and among our partners is crucial, we also focus on tangible areas of action to make this goal a reality.

Utilization of green energy

Another significant action area is the transition to green energy sources. Fujitsu is actively working towards reducing its reliance on fossil fuels and increasing the use of renewable energy in our operations. This shift not only contributes to reducing our carbon footprint but also sets a precedent for sustainable energy use in the manufacturing sector.





Educating and incentivizing the workforce for sustainable behavior

We recognize that our employees play a vital role in achieving our sustainability goals. Therefore, we are investing in education and incentive programs that encourage and reward sustainable behavior among our workforce. These programs are designed to raise awareness of environmental issues and promote practices that contribute to sustainability, both in professional and personal contexts.

Remote work and operation of assets and factories

In line with current global trends and sustainability objectives, Fujitsu is also embracing remote work and the remote operation of assets and factories. This approach not only reduces the need for travel and physical infrastructure but also enhances operational efficiency and flexibility, further contributing to our net-zero targets.



Taking a proactive stance to the sustainability challenge

The necessity to support a sustainable manufacturing sector goes beyond just immediate cost considerations, challenging conventional ideas of investment. While the focus is often on the expenses related to climate initiatives, it's essential to acknowledge the significant long-term savings and growth prospects that arise from integrating sustainability as a fundamental aspect of business strategy. This broader perspective reveals that sustainability efforts, while initially requiring investment, can lead to substantial economic benefits over time.

The evidence is compelling: addressing climate issues is not just a responsibility, but an opportunity for positive change and sustainable growth. Initiatives like energy management are prime examples of strategic investments that yield dual benefits – they help reduce operational costs and simultaneously address sustainability targets. Similarly, automation is another impactful area. By enhancing production processes, automation not only reduces waste and scrap but also increases worker safety, leading to more efficient and responsible manufacturing practices. These measures should be seen as investments that pave the way for innovation, resilience, and a competitive edge.



Protecting our planet is not only a moral obligation but also a viable and sustainable business opportunity. It is an assertion grounded in the understanding that the benefits of climate investments extend beyond environmental stewardship to encompass tangible financial gains and strategic positioning in a rapidly evolving business landscape.

Moreover, the urgency of action cannot be overstated. Waiting until 2050 to address climate challenges may result in heightened pressures and penalties. Initiating this work now is not only a responsible choice but a fiscally prudent one. The cost-effectiveness of early action becomes apparent when considering the long-term repercussions of delayed intervention.

Fujitsu is fully committed to supporting this transformative journey towards sustainability. Our dedication to sustainable practices is integral to our mission to enhance operational efficiency and environmental responsibility. With a comprehensive range of expertise that covers everything from developing new processes to helping our customers to enable a significant mindset shift, we are prepared to guide organizations through every aspect of this transformation.

Working together, we can convert these challenges into opportunities, paving the way for a future in manufacturing that is not only greener but also grounded in sustainable growth and resilience.



Contact Fujitsu to find out more about our services and products for manufacturers.

[Contact Fujitsu: Fujitsu Global](#)