

FUJITSU

Maximizing returns

Value chain optimization
in the sustainable era



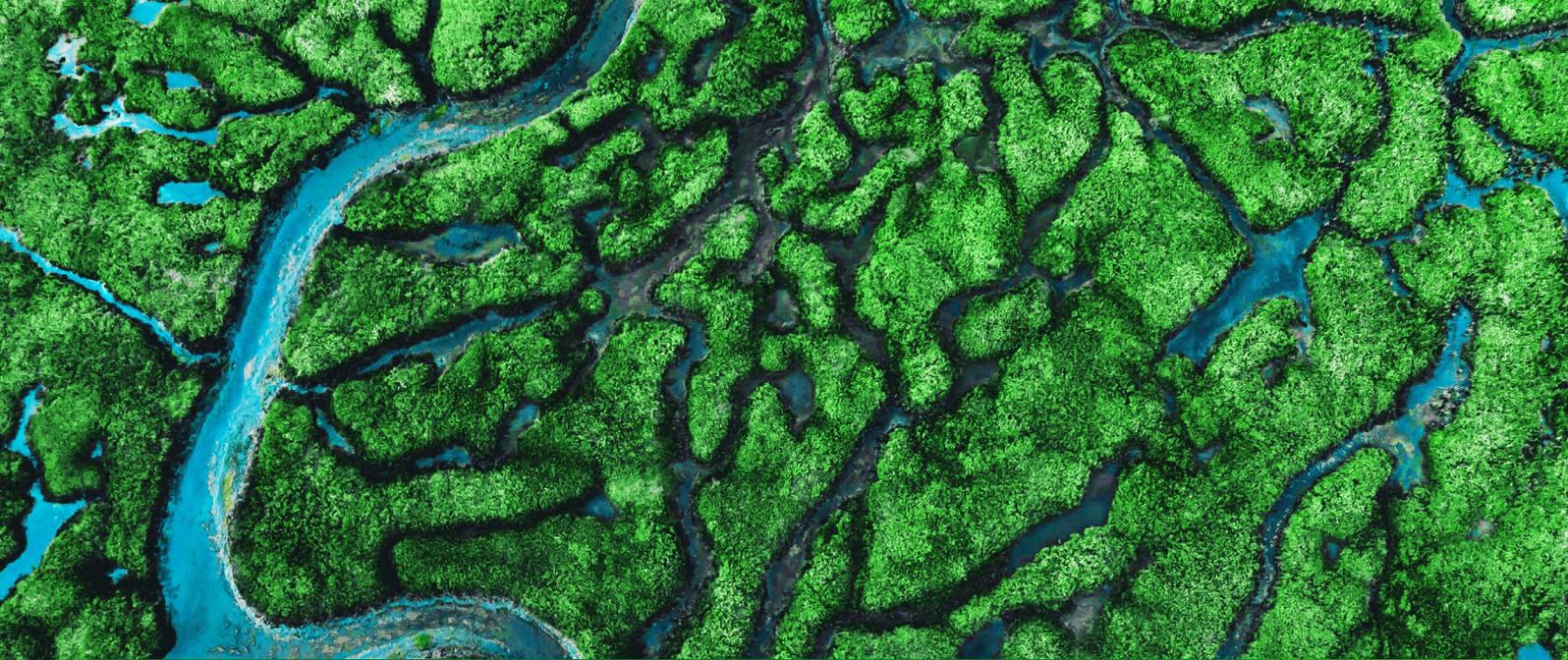
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From linear to circular - the evolution of the manufacturing value chain

In today's globalized economy, the concept of value chains is undergoing a significant transformation. The traditional linear model of sourcing, production, distribution, and disposal is gradually giving way to a more circular, sustainable approach. This transformation is driven not only by technological advancements and shifting consumer demands but also by the impact of supply chain disruptions and evolving regulations. These factors collectively underscore a growing emphasis on sustainability, urging businesses to rethink their value chain strategies for greater resilience and environmental responsibility.





The transition to circularity

Value chains have evolved into complex webs of interconnected activities and stakeholders, each contributing to the delivery of end products or services. In the modern market, there is an increasing focus on nurturing circularity. This shift requires rethinking the entire lifecycle of products – from sourcing and production to distribution, reuse, and beyond – to establish a sustainable cycle that reduces waste and enhances the efficiency of resource use. Additionally, the trend towards servitization, where businesses offer services in conjunction with or in place of physical products, is further transforming value chains. This approach not only contributes to circularity by extending product lifecycles and reducing waste but also opens new avenues for sustainable growth and customer engagement.

Opportunities and challenges presented by emerging technologies

Emerging technologies are reshaping the manufacturing landscape, offering new opportunities for innovation and growth within the value chain. However, these advancements also bring complexities. The adoption of technologies such as AI, IoT, and blockchain is revolutionizing conventional practices, making value chains not only more efficient but also increasingly complex.

This transformation necessitates the acquisition of new talent and skills, challenging businesses to adapt their workforce capabilities.

Furthermore, the integration of these technologies into existing systems presents hurdles in terms of compatibility and scalability, alongside the challenge of managing escalating volumes of data. Organizations are compelled to undertake processes and organizational changes to effectively leverage these technologies, ensuring that they can harness their full potential while mitigating the risks associated with tech-related challenges.



Consumer demands and their impact on the value chain

Understanding the dynamic demands of the modern consumer is crucial in this evolving landscape. Consumers are increasingly aware and concerned about the sustainability and ethical implications of their purchases. This shift in consumer behavior has a significant ripple effect on the value chain, pushing manufacturers to adapt their processes to meet these new expectations.



Inefficiencies and bottlenecks in modern value chains

Despite the opportunities, the intricacies of the modern value chain can lead to challenges, including bottlenecks, inefficiencies, and increased operational costs, which in turn can adversely affect sustainability. Examples of these bottlenecks include shortages of raw materials, exacerbated by high raw material and energy costs. Additionally, the scarcity of labor and essential skills poses a considerable challenge, alongside the impacts of inflation and stringent regulations.

Addressing these issues is crucial for the efficient functioning of value chains and involves focusing on key areas such as enhancing supply chain transparency, optimizing logistics, reducing waste, and managing energy more effectively. These efforts are vital for overcoming the identified bottlenecks and promoting a more sustainable and resilient value chain.



Shifting business models due to sustainability mandates and regulatory compliance

For manufacturing businesses today, navigating the intricate landscape of environmental and social compliance presents a significant challenge. Sustainability regulations, which encompass both environmental preservation and social responsibility, differ substantially across various geographical regions. The repercussions of failing to meet these mandates are profound, potentially harming a company's brand reputation and financial health. Furthermore, the spectrum of compliance now extends to encompass regulations on data privacy, security, and safety, adding another layer of complexity to operational practices.

Embracing these sustainability mandates, however, transcends mere compliance. It encourages companies to adopt a holistic sustainable approach across their entire value chain, potentially unlocking cost savings and operational efficiencies. By integrating both environmental and social aspects of sustainability into their business models, and ensuring adherence to data and safety regulations, companies can not only mitigate risks but also position themselves as leaders in sustainable and responsible manufacturing.



The growing influence of sustainability initiatives

Sustainability initiatives, both mandatory and voluntary, are increasingly shaping business practices. Legal standards set by governments are just one part of the equation. Manufacturers are also adopting voluntary codes like the [Greenhouse Gas Protocol](#) or sector-specific guidelines such as the [Forest Stewardship Council code](#). These initiatives play a crucial role in promoting sustainable practices and often go beyond the basic legal requirements, encouraging businesses to take a more comprehensive approach to environmental responsibility.

Economic benefits of global compliance standards

Contrary to some perceptions, adhering to high global sustainability standards can be economically advantageous for manufacturers. By implementing uniform environmental policies across all their facilities, businesses can benefit from economies of scale. This standardized approach optimizes supply chain operations within sustainability mandates, resulting in significant cost savings and improved operational efficiency.

Furthermore, embracing sustainability can drive key business performance indicators, enhancing productivity, optimizing costs, and potentially increasing revenue and profit margins. This perspective shifts the view of sustainability from obligatory compliance to a strategic asset that propels business success, underscoring its role in fostering a competitive advantage in the global market.



Proactivity beyond compliance

Once companies align with regulatory requirements, they can adopt a more proactive stance on environmental issues. This involves not only minimizing the use of non-renewable resources, such as fossil fuels, but also judiciously managing other resources to promote recycling and reduce waste, despite the associated costs. By implementing sustainable operational practices that exceed the baseline of compliance, businesses not only ensure adherence to environmental regulations but also distinguish themselves as frontrunners in corporate responsibility.

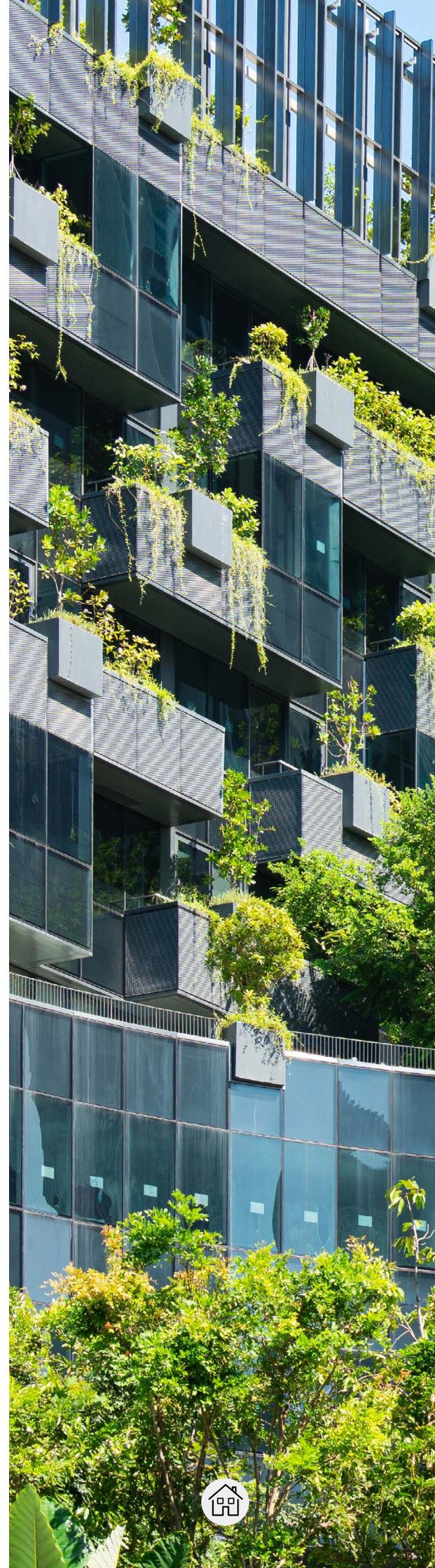
This forward-thinking approach to environmental management highlights a commitment to sustainability that resonates with consumers, investors, and stakeholders, creating a reputation of leadership and innovation in ecological stewardship.

Analyzing the value chain for eco-friendly practices

A key aspect of adhering to sustainability mandates involves analyzing and optimizing each link in the value chain. This process includes developing eco-friendly raw materials and product components and reducing waste, aligning with many current environmental regulations. Such an approach not only ensures compliance but also enhances the overall sustainability of the business operations.

Importance of understanding Scope 1, 2, and 3 emissions

Understanding and managing Scope 1, 2, and 3 emissions is becoming increasingly important in the context of regulatory compliance. These scopes cover direct emissions from owned or controlled sources, indirect emissions from the generation of purchased energy, and all other indirect emissions that occur in a company's value chain, respectively. Measuring and managing these emissions can have significant benefits for manufacturing operations, both in terms of regulatory compliance and profitability.



Potential financial gains from optimized value chains





Sustainability as a financial lever in supply chains

Far from being just another cost, sustainability in supply chains acts as a protective measure against disruption. The shift towards renewable energy sources and carbon offsets plays a crucial role in curbing greenhouse gas (GHG) emissions. Additionally, embracing sustainability encompasses a broad spectrum of initiatives, including energy management and the optimization of product designs and specifications with sustainability KPIs in mind.

Such practices, along with green purchasing, are instrumental in driving down overall operational costs. By embedding sustainability deeply into their supply chain strategies, companies can achieve a dual objective: significantly mitigating their environmental impact while simultaneously unlocking financial efficiencies and benefits. This approach redefines sustainability as a pivotal financial lever in the modern supply chain landscape.

Optimized chains and cost savings

Businesses that focus on optimizing their supply chains see remarkable financial benefits. These organizations typically have [15% lower supply chain costs](#), less than half the inventory holdings, and cash-to-cash cycles that are at least three times faster than their less optimized counterparts. This correlation highlights the substantial economic advantages that can be achieved through supply chain optimization.





Energy costs and sustainability programs

For many businesses, energy costs constitute a significant portion of their expenses. A [Gartner survey](#) of business leaders found that 80% believe sustainability programs are instrumental in optimizing and reducing costs, particularly in response to disruptions. This insight underlines the role of sustainability initiatives in enhancing operational efficiency and cost-effectiveness.

Value creation through sustainability strategies

Sustainability strategies go beyond cost offsetting; they actively create value. The same Gartner research indicates that 83% of business leaders agree that sustainability contributes to both short- and long-term value, aiding organizations in recovering from disruptions. This perspective showcases the broader impact of sustainability beyond environmental benefits, emphasizing its role in organizational resilience and financial health.



Increasing earnings in the mining industry

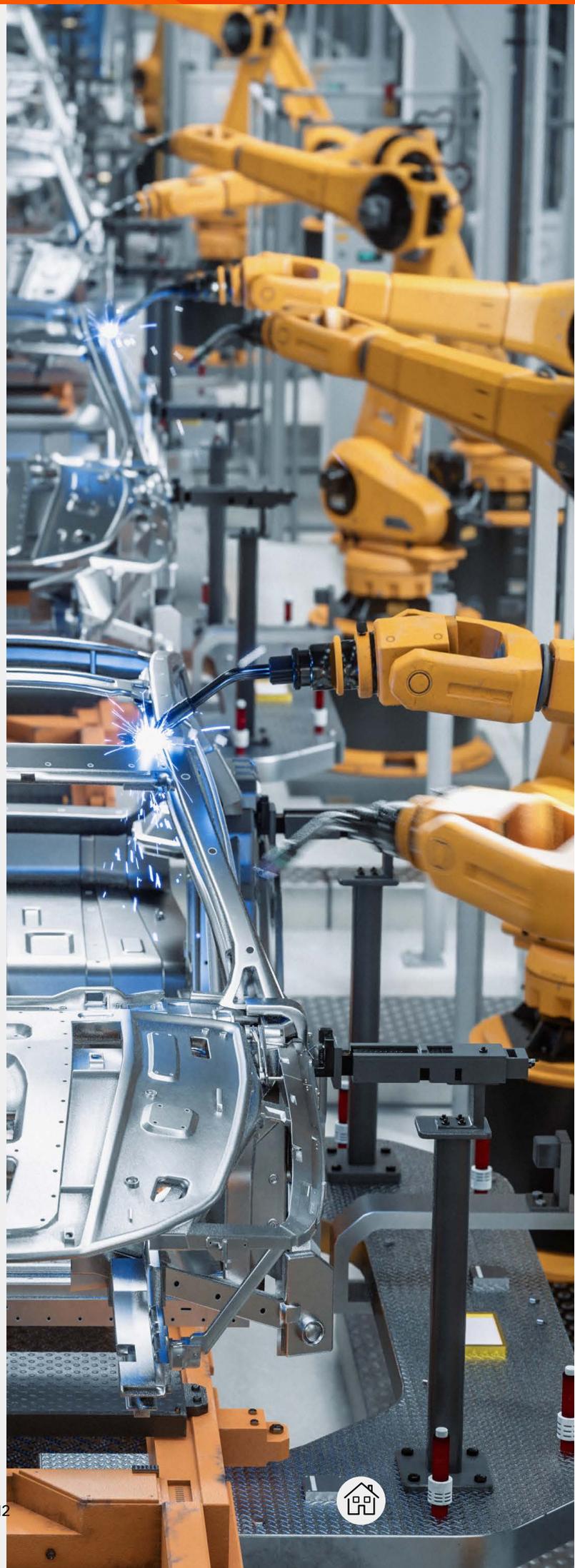
A [McKinsey study](#) involving mining companies across various countries and product types revealed that mine-to-market optimization could lead to a 10-15% increase in earnings before interest, taxes, depreciation, and amortization (EBITDA). This increase is attributed to improvements in throughput, product margins, and operating costs, demonstrating the financial impact of comprehensive value chain optimization.



Environmental tools for waste minimization

In the quest to identify and minimize waste, tools such as enterprise carbon management, carbon and energy footprint analysis, and life-cycle assessment play a pivotal role for businesses. These tools provide a comprehensive view of the environmental inputs and outputs across the entire value chain, from raw material supply through product use to end-of-life returns. This holistic approach allows companies to identify opportunities for significant savings, not just in terms of energy and water but also in capital expenditure.

Adding to these strategies, the application of AI in waste reduction is becoming increasingly crucial. Intelligent automation of production processes, facilitated by AI, significantly reduces scrap and other forms of waste. Moreover, proactive waste avoidance strategies are being integrated into research and development (R&D) and sourcing processes, showcasing how technology can lead the way in sustainable innovation. By leveraging AI for smarter production and early-stage waste prevention, businesses can uncover novel ways to cut costs while advancing their sustainability goals, demonstrating a commitment to environmental stewardship and efficient resource utilization.



Success stories in value chain innovation

Optimizing bourbon aging with IoT

[Beam Suntory](#) leveraged GlobeRanger's iMotion IoT platform to monitor the aging process of bourbon within each barrel. Beyond streamlining paperwork, this advanced technology empowers Beam Suntory to detect and intervene in real-time evaporation occurrences. This proactive approach drastically reduces bourbon waste, ensures optimal aging, and enhances overall output. As an added advantage, consumers can gain insight into individual barrel histories, reinforcing transparency and engagement.



Advancing value chain optimization with Fujitsu

Embracing the complexities of modern value chains

Fujitsu acknowledges the intricate nature of today's value chains and adopts a comprehensive approach to their optimization. We leverage a blend of cutting-edge technologies, innovative practices, and extensive industry knowledge to create solutions tailored to the nuanced needs of the entire value chain ecosystem. Central to our strategy is a composable approach, which allows us to integrate multiple technologies in a best-of-breed fashion. This flexibility ensures that our solutions are not only comprehensive but also adaptable, enabling us to address specific challenges within the value chain with precision and efficiency. By following this composable methodology, we are equipped to offer versatile, scalable solutions that drive sustainable growth and operational excellence.





Innovative AI solutions for optimization

Central to our strategy lies the implementation of advanced solutions, including the [Fujitsu Digital Annealer](#), [Kozuchi](#), and [Track and Trust Blockchain](#) solutions. These technologies are pivotal in processing and optimizing the multitude of variables essential for managing a successful value chain. For instance, the Digital Annealer tackles complex logistical challenges, Kozuchi facilitates efficient decision-making processes, and Track and Trust Blockchain enhances transparency and security in supply chain operations.

Leveraging the Industrial Metaverse and AI for enhanced collaboration

The adoption of the [Industrial Metaverse](#) is a game-changer, opening new avenues for collaboration across the value chain. This immersive, interactive platform facilitates real-time cooperation, significantly streamlining operations and boosting efficiency. Stakeholders can simulate diverse scenarios and project outcomes, enabling more strategic and informed decision-making processes.

Moreover, the potential of combining the Metaverse with AI cannot be overstated. This synergy amplifies the capabilities of both technologies, allowing for advanced scenario modeling, predictive analytics, and intelligent automation. Together, the Metaverse and AI create a powerful tool for optimizing value chains, making them more adaptive and resilient while unlocking unprecedented opportunities for innovation and efficiency.





Flexible and scalable solutions

Our solutions are designed to be both flexible and scalable, developed within a composable portfolio that ensures seamless integration into the shifting dynamics of businesses and regulatory frameworks. This composable approach facilitates a step-by-step implementation strategy, allowing organizations to tailor their adoption process according to their specific needs and pace of change. Such flexibility is invaluable for businesses aiming to maintain a competitive edge in the current marketplace, enabling them to strategically adjust and respond to new challenges and opportunities with agility. This method not only supports immediate adaptation needs but also lays a foundation for scalable growth, ensuring that solutions evolve in tandem with business expansion and transformation.

Empowering stakeholders with optimal tools and insights

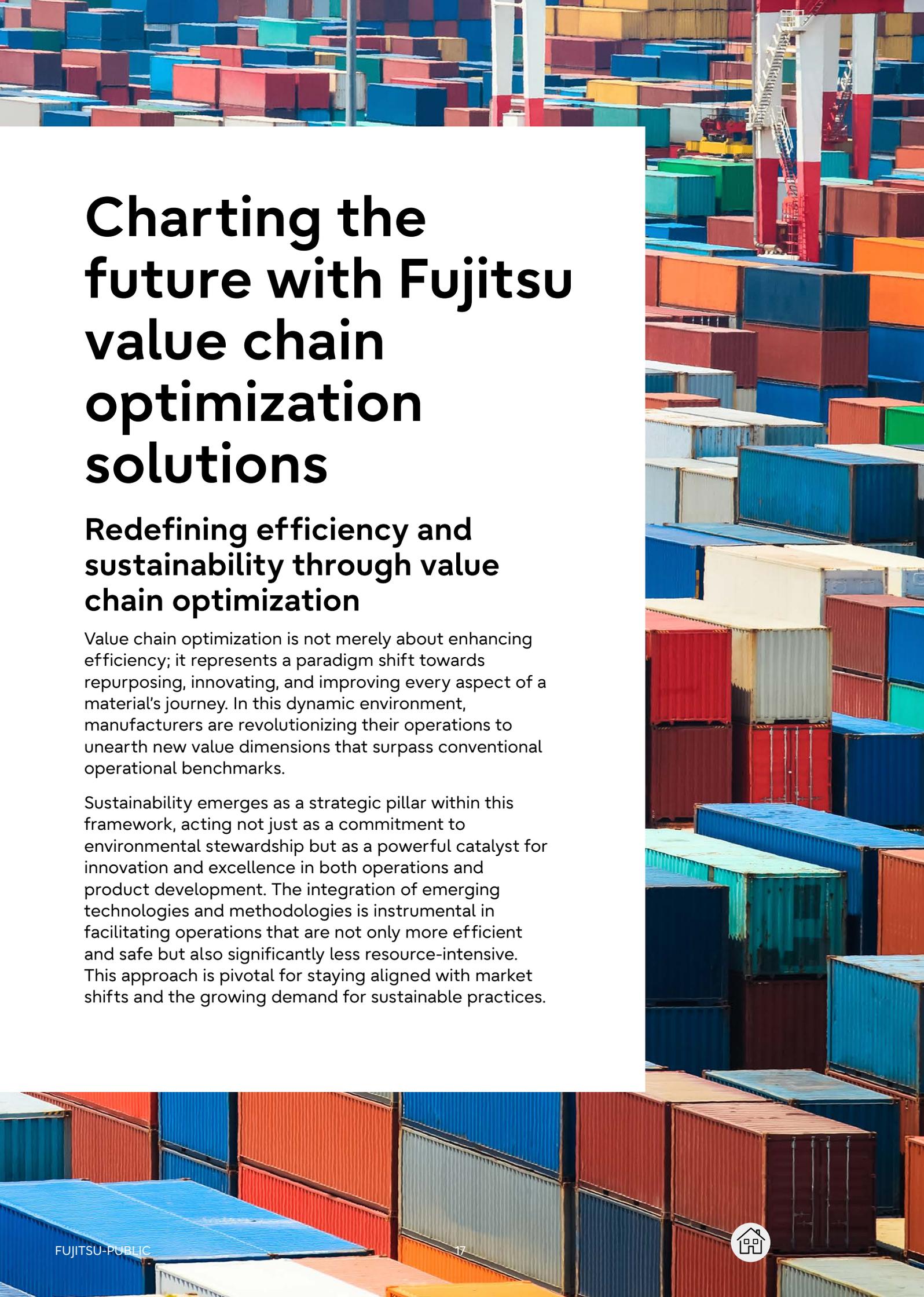
We place a strong emphasis on solutions that optimize operations while empowering executive decision makers with the necessary tools and insights for informed decision-making. This approach ensures that every element of the value chain, from sourcing to distribution, is optimized for efficiency, sustainability, and profitability.



The power of partnerships in manufacturing

For manufacturers, the strength of partnerships is key to unlocking agility and innovation in the end-to-end value chain. We collaborate closely with customers, understanding their unique challenges and goals, to co-create solutions that drive value and enable innovation. These partnerships are instrumental in navigating the complexities of the modern value chain and achieving sustained success.





Charting the future with Fujitsu value chain optimization solutions

Redefining efficiency and sustainability through value chain optimization

Value chain optimization is not merely about enhancing efficiency; it represents a paradigm shift towards repurposing, innovating, and improving every aspect of a material's journey. In this dynamic environment, manufacturers are revolutionizing their operations to unearth new value dimensions that surpass conventional operational benchmarks.

Sustainability emerges as a strategic pillar within this framework, acting not just as a commitment to environmental stewardship but as a powerful catalyst for innovation and excellence in both operations and product development. The integration of emerging technologies and methodologies is instrumental in facilitating operations that are not only more efficient and safe but also significantly less resource-intensive. This approach is pivotal for staying aligned with market shifts and the growing demand for sustainable practices.



Benefits of the Fujitsu value chain optimization approach

Manufacturers adopting our Value Chain Optimization solutions will unlock numerous advantages, seamlessly blending sustainability with innovation to achieve superior operational and product excellence:



Maximized material value

This approach leads to the development of diversified products and extends material life-cycles, thereby maximizing the value derived from each resource.



Innovative product development

By fostering innovation, manufacturers can develop new products, opening up new revenue streams and reaching broader customer segments.



Resource circularity

This strategy leads to the rejuvenation of finished products, significantly reducing waste and minimizing the need for fresh resource extraction.



Strengthened supplier relationships

Through our approach, manufacturers can explore alternative material applications and enhance supply continuity, leading to stronger, more resilient supplier relationships.



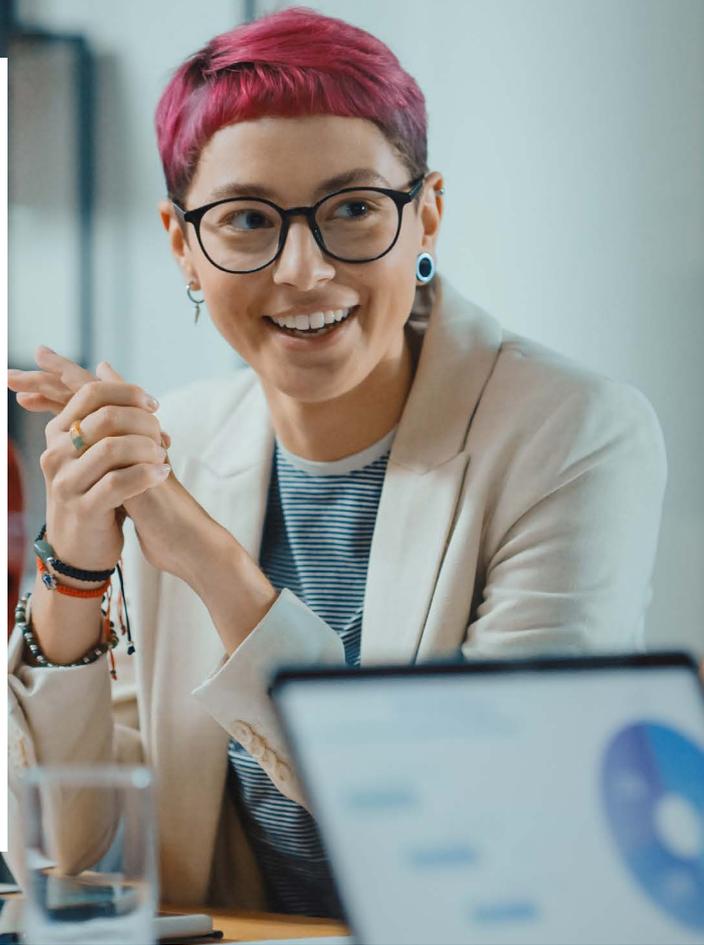
Sustainable competitive advantage

By adopting these sustainable practices, manufacturers appeal not only to environmentally conscious consumers but also to regulators and governmental bodies, securing a competitive edge in an increasingly eco-aware market.



Collaborate with Fujitsu for a sustainable future in manufacturing

The path to an optimized and sustainable future in manufacturing is through a holistic approach to value chain optimization, a journey that Fujitsu is uniquely positioned to guide. By partnering with us, you can transform your organization's value chains into dynamic, efficient, and resilient systems that not only meet the demands of today's market but are also primed to seize the opportunities of tomorrow.



Why choose Fujitsu?

Our key differentiators:

Composable and customizable solutions

Our composable portfolio allows for tailored implementation, ensuring that solutions perfectly align with your specific operational needs and sustainability goals.

Innovative integration of sustainability and technology

Our unique approach combines cutting-edge technological solutions with sustainability, driving not only efficiency but also environmental consciousness across your value chains.

Expertise across industries

Leveraging deep-seated industry knowledge, Fujitsu provides insights and solutions that transcend traditional boundaries, offering a competitive edge in a changing marketplace.



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

[Contact Fujitsu: Fujitsu Global](#)