



The future unboxed: **Innovative tech trends** **driving the consumer** **goods industry**

How to meet shifting consumer expectations with tech-enabled, efficient and eco-friendly operations

Foreword

Adapting rapidly to changing consumer preferences is deep in the DNA of consumer goods companies. In this cutthroat industry, companies know that failing to meet consumers' high expectations means risking losing precious market share.

However, today, extra pressures make delighting consumers even more challenging. Customers want products personalised to a much greater degree than ever before. They expect a seamless and tailored omnichannel shopping experience that draws on advanced digital technologies. And they increasingly demand that their chosen brands operate with a high degree of sustainability.

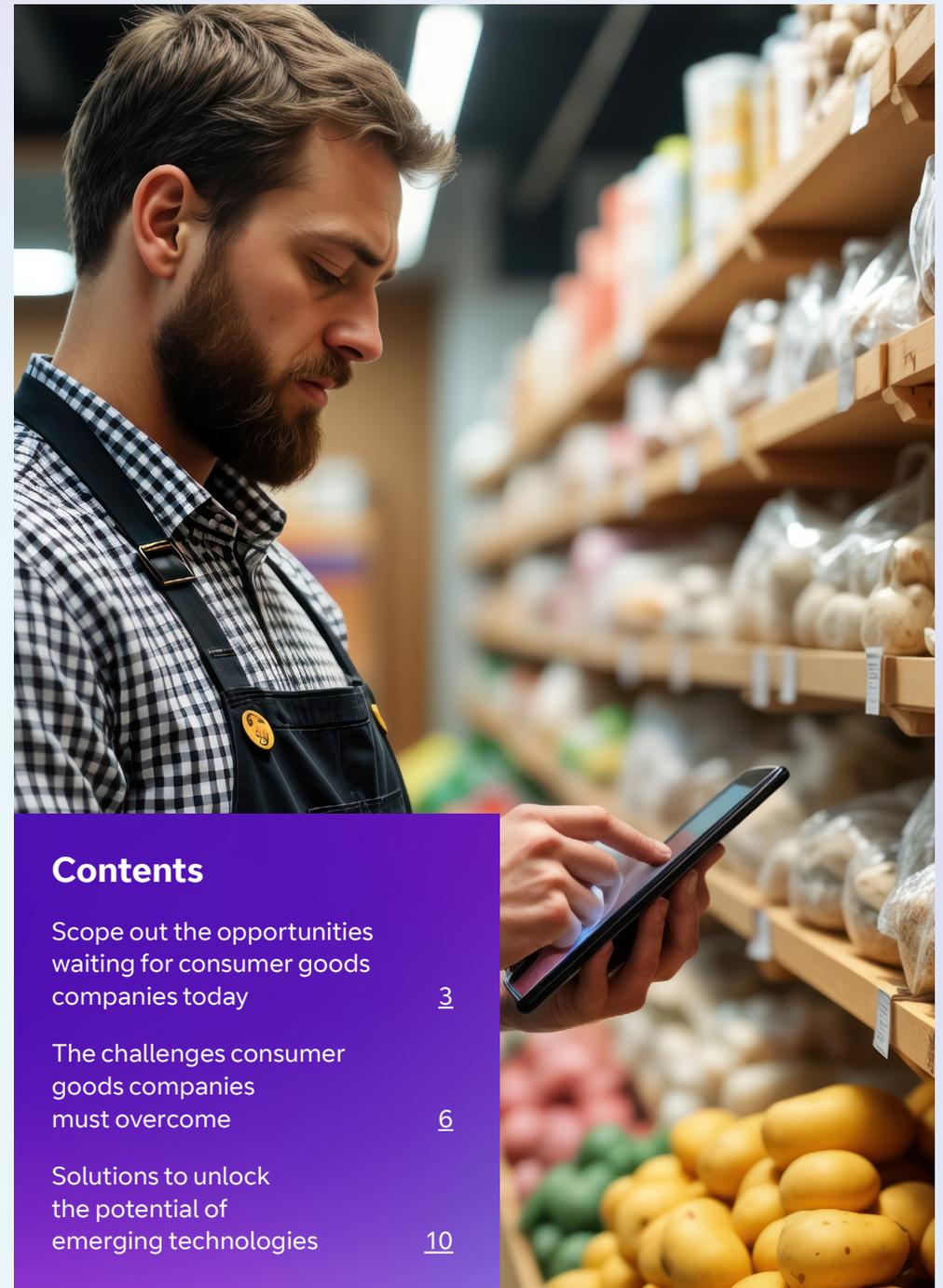
At the same time, consumer goods companies are managing transformation on two fronts. They're navigating the complexities of integrating digitalisation into their e-commerce functions as well as embedding AI, robotics and automation into their production and logistics environments.

When responsiveness to prevailing trends and preferences is so critical, competitive advantage will go to the consumer goods companies that get innovative technologies working for them swiftly and effectively.

But to do this, they need a robust foundation of intelligent networks, connectivity and advanced security solutions.

As a global business, we collaborate with industry leaders worldwide, including many international consumer goods companies like yours. In this whitepaper, we've combined these global industrial insights with our deep expertise in leveraging innovative technologies to explore how you could best exploit the changes reshaping your industry.

**Ready to explore the possibilities?
Get in touch with us today.**



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Scope out the opportunities waiting for consumer goods companies today

Waves of change are washing through the consumer goods industry, driven by technological advances, shifting consumer preferences and rising sustainability imperatives. These changes hold massive potential for companies to set themselves up for a profitable future.

Here, we outline the most exciting opportunities.

Leverage new routes to growing competitiveness and market share

In a tight economic environment where consumers are unwilling to pay more and often trade down, and retailers push back against price increases, consumer goods companies are looking for new approaches to growing their business.

Many market leaders are using digital transformation to address multiple needs. They're enhancing production efficiency by integrating AI, robotics and automation to control costs. Then, they're using the flexibility that comes from a strong base of intelligent networks, connectivity and advanced security solutions to explore, scope and swiftly adopt new ways of operating.

For example, they can pivot to delivering emerging forms of 'premiumisation' that command higher prices and margins, running these alongside the more value-focused offerings that lock in more price-conscious consumers.

This cost-effective production and agility combination allows consumer goods companies to compete with new entrants and established brands while maintaining affordability and profitability.



92%
of consumer product companies believe investing in technology is essential to staying competitive.

Move rapidly to exploit evolving consumer preferences

Digitalisation has made it viable for smaller brands focusing on niche areas to take market share from established companies. In response, larger consumer goods companies can use digitalisation to copy this behaviour, jumping on changing preferences and expectations as they emerge to maximise revenue.

Using digital technologies, consumer goods companies can serve the market for high-quality, personalised, different and authentic products. For example, they can swiftly leverage the worldwide upsurge in the wellness market, estimated to be worth more than \$1.8 trillion and growing by 5% to 10% annually. With digital agility, they can re-evaluate their portfolio for opportunities to introduce personalised wellness products or enhance the wellness credentials of existing products.

In 2024,

81%
consumers preferred companies that offer a personalised experience.



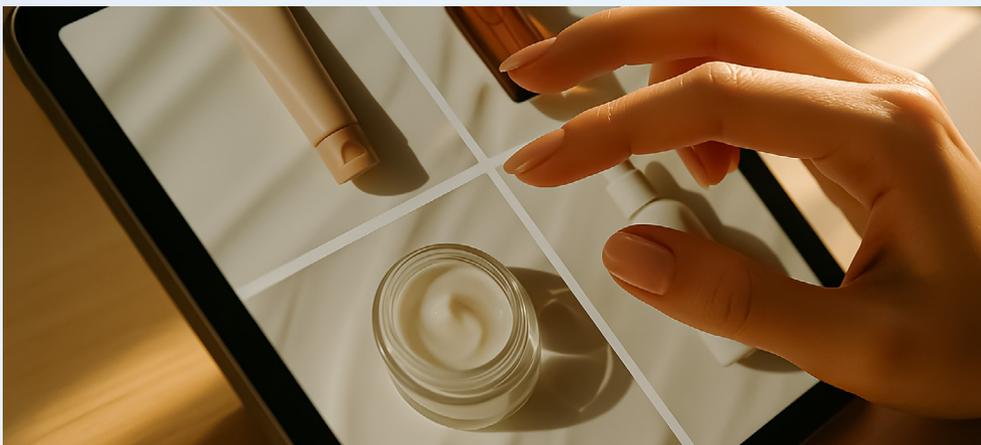
Embrace sustainable operations and circular economy principles

Consumer knowledge and sustainability awareness are growing rapidly, particularly among younger age groups. Today's consumer looks for environmentally sound practices throughout a product's lifecycle, from sourcing and packaging to distribution and recycling. Increasingly, these eco-conscious principles drive consumer purchase decisions, including a willingness to pay an average sustainability premium of 9.7%.

New market entrants, in particular, are centring their strategies on sustainability, quickly taking market share from established brands that haven't moved in this direction. Once in this market, companies with the right technological capabilities can make even more of an impact, not only protecting their market share from challengers but also establishing

a leading competitive position – all while improving the company's operational efficiency. A smart blend of digital technologies can power a complete supply chain redesign to cut energy use and waste, reduce travel miles, bring greenification principles into transport and extend product lifespans. Implementing circular economy practices can reduce greenhouse gas emissions by up to 39% and waste by up to 80%.

The in-depth knowledge of the consumer that digitalisation enables opens up many more opportunities for increasing sustainability and growing market share. Imagine, for example, being able to offer data-driven, personalised in-store recycling experiences that let consumers know exactly how much carbon they've helped save and thank them with a personalised discount on their next purchase.



80%
of global consumers are willing to pay more for sustainable products.



Secure valuable production efficiency gains with AI, robotics and automation

Locking in production and logistical efficiency gains protects margins and increases worker safety in the consumer goods industry. Introducing a sensor network and AI-powered machine learning models into production lines makes predictive maintenance possible to avoid expensive unplanned shutdowns. It also identifies inefficient machines that consume more energy than necessary so engineers can make adjustments to address this.

AI-driven autonomous robots and collaborative robots (cobots) have enormous potential to eliminate human fallibility in the production line and to remove humans from risky environments altogether. Robotic Process Automation (RPA) systems can work day and night with high levels of precision and consistency, robotic vision systems can detect quality defects faster than humans and reprogrammable robotic arms can rapidly adapt to production changes without significant reconfiguration costs.

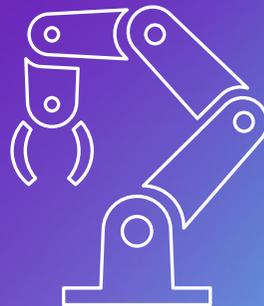


Robotic systems are estimated to boost productivity by up to

30%

and reduce workplace accidents by up to

70%.



The challenges consumer goods companies must overcome

The evolving consumer goods environment presents significant opportunities, but in such a dynamic market, companies must understand and actively mitigate any potential challenges to unlock market success. Here, we outline what aspects companies should factor into their strategies.

Difficulties preparing existing IT infrastructure for AI and robotics

Production line machines using older types of industrial automation were not designed to connect with modern digital technologies. Legacy systems often store data in isolated formats, making it hard to create the unified data pipeline demanded by advanced applications. They also lack the scalability and processing power required to handle high data volumes and support AI and robotics in real time.

Hardware limitations can mean legacy machines can't support IoT sensors or cloud connectivity without expensive modifications, and proprietary software used in legacy systems often lacks APIs and integration capabilities, making data exchange difficult.

Retrofitting is an expensive and limited option for achieving successful AI and robotics installations. Unfortunately, significant upgrades, including

enhanced data processing capabilities, are frequently the only route to flexible, scalable networks and cloud solutions.

Older systems also lack modern security protocols, making them vulnerable to cyber attacks and data breaches. Furthermore, AI demands that legacy equipment be connected, introducing new security vulnerabilities that need advanced threat protection.

Around
89%
of large
companies globally
are undergoing a
digital and AI
transformation.

Accessing the data-driven insights essential to enhanced operations

Consumer goods companies can't measure, optimise and understand what they can't see, so they must integrate data from fragmented systems across the organisation and supply chain into a holistic, accurate, single-pane-of-glass view. Creating this view can be difficult; every point within the operation that generates data must become part of the system, which means integrating significant numbers of devices, machines, sensors and processors. And unfortunately, legacy systems and data silos often don't integrate well with modern AI-driven analytics and IoT platforms without costly, customised solutions.

However, this data integration is essential if companies wish to operationalise data and generate insights critical to understanding consumer behaviour, refining product development processes and optimising supply chains.



Around
90%
of companies
report difficulties
integrating AI
with other
data systems.



Keeping supply chains flowing

When supply chain disruption can lead to consumer goods companies breaking their contracts with retailers, supply chains must be ultra-resilient and flexible to operate smoothly – particularly in a world disrupted by geopolitical instability and tariffs. Central to this is the ability to make rapid, intelligent supply chain decisions to secure the raw materials and products required in the most cost-effective and sustainable way possible.

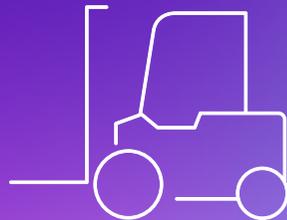
By combining AI and data analytics, consumer goods companies can create a digital twin of their operations to test different supply chain configurations and run risk simulation scenarios to keep production flowing smoothly.

This allows companies to make rapid, intelligent decisions to stay ahead of emerging issues and navigate the complex network of regional regulations that can slow trade.

2024 saw a

38%

**increase YoY in
global supply
chain disruptions.**



Delivering seamless, omnichannel shopping experiences

Today's consumers expect outstanding experiences with a high degree of personalisation that follows them seamlessly as they roam across channels. As a result, consumer goods companies now aim to delight the 'segment of one' by giving every individual a hyper-personalised experience powered by real-time data captured at every customer touch point. Unfortunately, companies have significant blind spots because they don't have a direct relationship with consumers in the retail environment.

They have to substitute real-time reactions to products during in-store purchasing with research data, which delays understanding and doesn't drill down into individual responses. No experience can genuinely be omnichannel when the consumer goods company doesn't control the physical retail spaces.

However, leading companies are actively pursuing solutions to this challenge. Those with a robust digital foundation are exploring initiatives such as intelligent shelf technology to gain visibility into in-store purchasing or establishing collaborative data partnerships with retailers to understand consumers' retail experiences.

In 2024,

66%

**of Gen Z and 60%
of Millennials
expected brands to
comprehend their
individual needs
and interests .**



Cyber security to protect consumer data against evolving threats

Consumer goods companies' cyber security must protect every aspect of consumer data collection, storage and transfer involved in hyper-personalised, omnichannel experiences. Critically, this must stretch across the business, supply chain and third parties. These defences must also be sufficiently resilient to inspire consumer trust and sufficiently responsive to allow companies to adapt quickly to changing market conditions.

As companies hold increasing amounts of consumer data, potentially moving it around the world, the imperative to comply with all relevant data privacy regulations will increase. Cyber security must be robust and compliant, and central to this will be round-the-clock monitoring of the company's entire estate to identify

and mitigate any cyber attacks as soon as they appear on the horizon. AI-powered automated defences will help security teams assess the significant volumes of data involved to pinpoint threats requiring specific expert attention.

In 2024, the global average data breach was up

10%
from 2023 levels and reached the highest total ever, \$4.88 million.

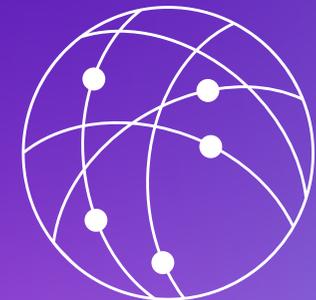
Sustainability compliance with regulations around the world

Consumer goods companies with global reach must comply with stringent environmental regulations and targets that vary from region to region. With legislation such as Extended Producer Responsibility (EPR) laws, the Ecodesign for Sustainable Products Regulation (ESPR) in the EU, and growing demands for ESG (Environmental, Social and Governance) reporting, businesses are under increasing pressure to demonstrate accountability.

This will require accurate monitoring and reporting on sustainability criteria, broken down by any territory at any time. Companies must have deep, near-real-time end-to-end visibility to avoid non-compliance penalties.

Global ESG-related fines surged by

**98%,
totalling \$37.7 million in 2024.**



Transforming the workforce for the future

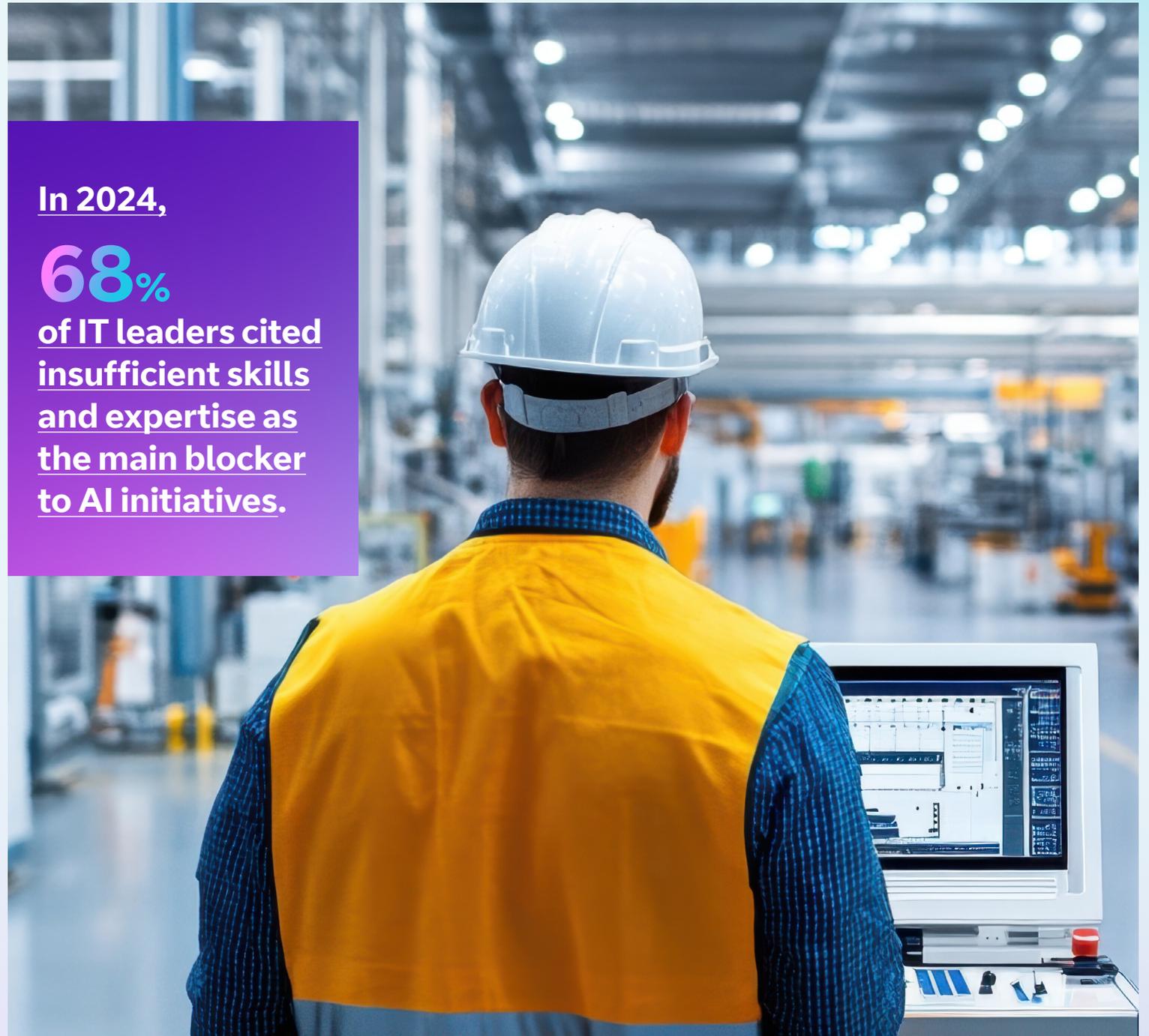
A rapidly evolving industry brings dramatic changes and challenges for the workforce regarding widespread upskilling and reskilling. Plus, the further consumer goods companies move into digitalised operations with heavy use of AI and robotics, the more they must compete with technology industries for a finite talent pool.

Effective, real-time remote collaboration capabilities will be critical for sharing knowledge, sparking innovation and creating strong working relationships. A digital infrastructure and reliable, ultra-low-latency connectivity are fundamental, supporting the augmented, extended and virtual reality solutions that are so important in bringing remote collaboration alive. In many cases, consumer goods companies will need private 5G to secure proprietary systems or intellectual property during collaborative work. Using a 5G solution also means they can access all the benefits of high-density and near-zero latency possibilities.

In 2024,

68%

of IT leaders cited insufficient skills and expertise as the main blocker to AI initiatives.



Solutions to unlock the potential of emerging technologies

We offer a comprehensive ecosystem of solutions to address the challenges consumer goods companies typically face when adopting digital transformation initiatives such as AI and robotics. Here, we highlight some of our core solutions:

Global Fabric

BT Global Fabric provides a scalable, cloud-centric networking solution designed to handle the increased data traffic and computational demands of innovative technologies such as AI and robotic systems. It's the key to improving productivity by avoiding application downtime, removing network friction and maintaining resilient connectivity.

This revolutionary network simplifies the orchestration of networks, clouds and infrastructures – regardless of provider. It efficiently supports the seamless integration and consistent deployment of solutions across different regions, cloud providers and partners. Global Fabric adjusts configurations worldwide in minutes rather than weeks so consumer goods companies can alter power, capacity, location and service requirements in real time. It also offers clear routes to optimise cloud and network costs with a pay-for-what-you-use structure and minimised public cloud egress charges.

Edge technology orchestration and computing capability

Our expertise in field area networks, including private / hybrid mobile networks and Wi-Fi, ensures robust and flexible connectivity solutions tailored to the specific requirements of consumer goods companies.

Combined with edge computing solutions, we enable real-time data processing and analytics at the source, reducing latency, enhancing decision-making capabilities and improving agility. This is crucial for predictive maintenance, real-time monitoring of robotic systems and extended reality solutions for immersive training, simulation and remote collaboration.

Intelligently managing AI-driven analytics, IoT sensors and connected machinery at the edge ensures that critical decisions can be made instantly on the production floor. From this intelligence, edge computing generates strategic insights so consumer goods companies can respond instantly to equipment potential failures, optimise production lines, manage natural and human resources efficiently and reduce downtime.

Edge computing also supports optimised workload distribution allowing companies to streamline operations while reducing the burden on centralised cloud systems.





Industrial IoT and IT / OT convergence

We support the integration of Industrial IoT (IIoT) with IT / OT convergence by delivering secure, high-performance connectivity, intelligent automation and advanced cyber security solutions tailored for production environments. Using the mix of private 5G, SD-WAN and edge computing appropriate for the consumer goods company, we seamlessly and securely connect OT systems - such as industrial sensors, robotics and control systems - with IT applications, including cloud platforms and AI-driven analytics, for streamlined, real-time data exchange.

Additionally, our Zero Trust security framework and encrypted data flows safeguard IIoT deployments, ensuring resilient and cyber-secure IT / OT convergence for smart production.

Operational efficiency

With real-time performance metrics, software-defined routing and a secure, high-capacity core, we optimise maintenance costs and reduce unplanned downtime, aligning with the operational benefits of AI-driven predictive maintenance and robotic systems.

This enables consumer goods companies to operate more efficiently and respond proactively to potential disruptions. Plus, by integrating encrypted data flows, resilient connectivity and intelligent automation, our solutions prioritise latency-sensitive processes, such as robotic assembly lines and remote machine monitoring, keeping production agile and efficient.

A high-capacity core also supports large-scale data transmission from multiple manufacturing sites, allowing consumer goods companies to centralise operational insights and optimise production planning more accurately.

Cost-effective scalability

Global Fabric's pay-as-you-use model is a cost-effective route to scaling AI and robotics initiatives without incurring prohibitive costs. With many consumer goods companies reporting scalability issues, they welcome rapid orchestration, real-time on-demand network access and the ability to avoid investing in slow-to-install hardware.

This means that AI-driven automation, machine learning and IoT applications can be deployed and expanded with fewer financial constraints, and companies can swiftly adapt to changing production demands. Dynamic bandwidth allocation and intelligent traffic management also optimise resource usage and reduce operational costs while maintaining high performance.



Security and reliability

Advanced end-to-end encryption and support for Zero Trust security frameworks ensure critical functions are secured and protected. Real-time threat intelligence and monitoring, plus AI-driven cyber security solutions such as DDoS mitigation, help consumer goods companies detect and mitigate cyber risks before they impact operations. This is particularly important as the volume of consumer data companies handle increases and essential data moves beyond the production environment.

We deliver this essential security and ultra-reliable data transfer using a mix of private 5G, SD-WAN, secure cloud solutions and our global network to ensure the resilient, high-performance connectivity crucial for deploying AI and robotics across a global supply chain.

Sustainability

All our solutions are designed with sustainability in mind to support consumer goods companies' environmental goals. They focus on reducing carbon footprints and resource waste with energy-efficient network solutions, optimised connectivity and intelligent digital technologies that reduce reliance on energy-intensive on-premise infrastructure.

Our solutions help to reduce emissions and provide tools to monitor and track energy consumption across all your sites, from offices and factories to warehouses and shops. To support this, our services - powered by green energy, an efficient infrastructure and adaptive algorithms - optimise production environments and reduce natural resource consumption.

Our sustainability tools deliver a real-time, in-depth view of total energy consumption and carbon footprint data of any IT services companies buy. They can also drill down to identify carbon-intensive devices and system inefficiencies.

Extended Reality (XR)

Our extended reality solutions offer immersive training, simulation and remote collaboration capabilities to help the workforce keep up with rapid advances in how consumer goods companies operate. XR can enhance workforce training by providing realistic, hands-on experiences without the need for physical prototypes or environments. This technology also supports the training of new joiners and remote maintenance and repair. XR allows experts to guide on-site technicians through complex procedures in real time, reducing downtime and improving efficiency.

Alongside XR applications, digital voice and collaboration solutions are integral to efficient workforce communication worldwide, enhancing how consumer goods companies use advanced digital solutions.



Lead your market

Change is happening in the consumer goods sector, and we're ready to help you lead this transformation.

Our ambition is to become the world's most trusted connector of people, devices and machines, and we've channelled this ambition into solutions to help consumer goods companies fully realise the transformative potential of innovative technologies such as AI and robotics in their operations.

Visit our dedicated webpage for more information or contact your account manager to explore the possibilities.

Offices Worldwide

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