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What's next for digital infrastructure in sustainable manufacturing?

A short guide on bringing together traditional IT, cloud and Operational Technology (OT) to empower transformational change

Start

Manufacturers are transforming to thrive in changing markets

Manufacturing has always been the engine of economic change and growth and it continues to be so. But there's an 'agility gap' that needs to be addressed. Manufacturers are constantly challenged to adapt to the unpredictable and act flexibly to continuously provide products and services that enhance people's lives. And they need to build in more resiliency to cope with challenges like labour imbalances, regulations, supply-chain-issues, and even singular events like the pandemic and political crisis. But Fujitsu's Hybrid Cloud Leaders Survey revealed that there's unease and uncertainty within the sector's management. For instance, just 27% are confident that they can scale resources to meet their business needs, while only 13% said they could modernize their applications to achieve performance optimization.

The problem is a lack of confidence in their digital infrastructure. The same survey showed that less than a quarter of manufacturers feel that their current Hybrid IT infrastructure was fit-for-purpose. The same number achieving reduced costs from their IT service delivery in their current environment. That's not good. Especially as significant numbers of manufacturers want to leverage the power of emerging technologies to empower their operations, as well as drive service and product innovation.

The tradition within the sector has been to overcome challenges through innovation, and by automating and transforming to increase resilience and adaptability. Many are eager to deploy, or are about to deploy, new strategies and digital transformation (DX) technologies including increased factory automation, Internet of Things (IOT), Artificial Intelligence (AI) and Robotic Process Automation (RPA) initiatives. The goal is to improve their competitive position. To do that manufacturers also need to renew their Enterprise Applications landscape and workplaces technologies. Enhanced employee experience is also important. As is reducing the high costs of current hybrid cloud environments, overcoming data silos and a lack of visibility across the organization, and, of course, mitigating the ever present risk of cyber-attacks.

Manufacturers, it is clear, are looking to introduce ecosystems which enable seamless interactions with partners and digital co-creation capabilities complement manufacturers' transformation activities. That's why they have realized that an empowering digital infrastructure is vital to their ability to adapt and thrive.

The key steps to delivering agile and sustainable manufacturing

To satisfy the demands of both the business and society – to produce the goods people want and to do it in a sustainable a way – manufacturers need an IT platform that is best equipped to support meeting those ends. An IT platform which delivers resilience, adaptability, and can connect everyone that needs to be connected: the workforce, tie-in partners, suppliers, and customers. They must all be able to work within a cohesive and seamless ecosystem.

It's also vital that manufacturers are ready to integrate emerging technologies easily – at speed and at scale – so that they can leverage the benefits of Artificial Intelligence, Machine Learning, data analytics, and other emerging technologies.

So, what do they have to do next to make the most of what is a unique opportunity to drive the digital transformation of manufacturing?

Simply, they need to ensure they get the best information possible from multiple sources about what's changing in the market and how their customers' requirements are evolving. They need to use a strong ecosystem to partner with the right people and organizations so that they can develop the new products and services which the market demands (or doesn't even know it needs yet). By doing that manufacturers will benefit from increased scalability, greater flexibility, and deeper resilience.

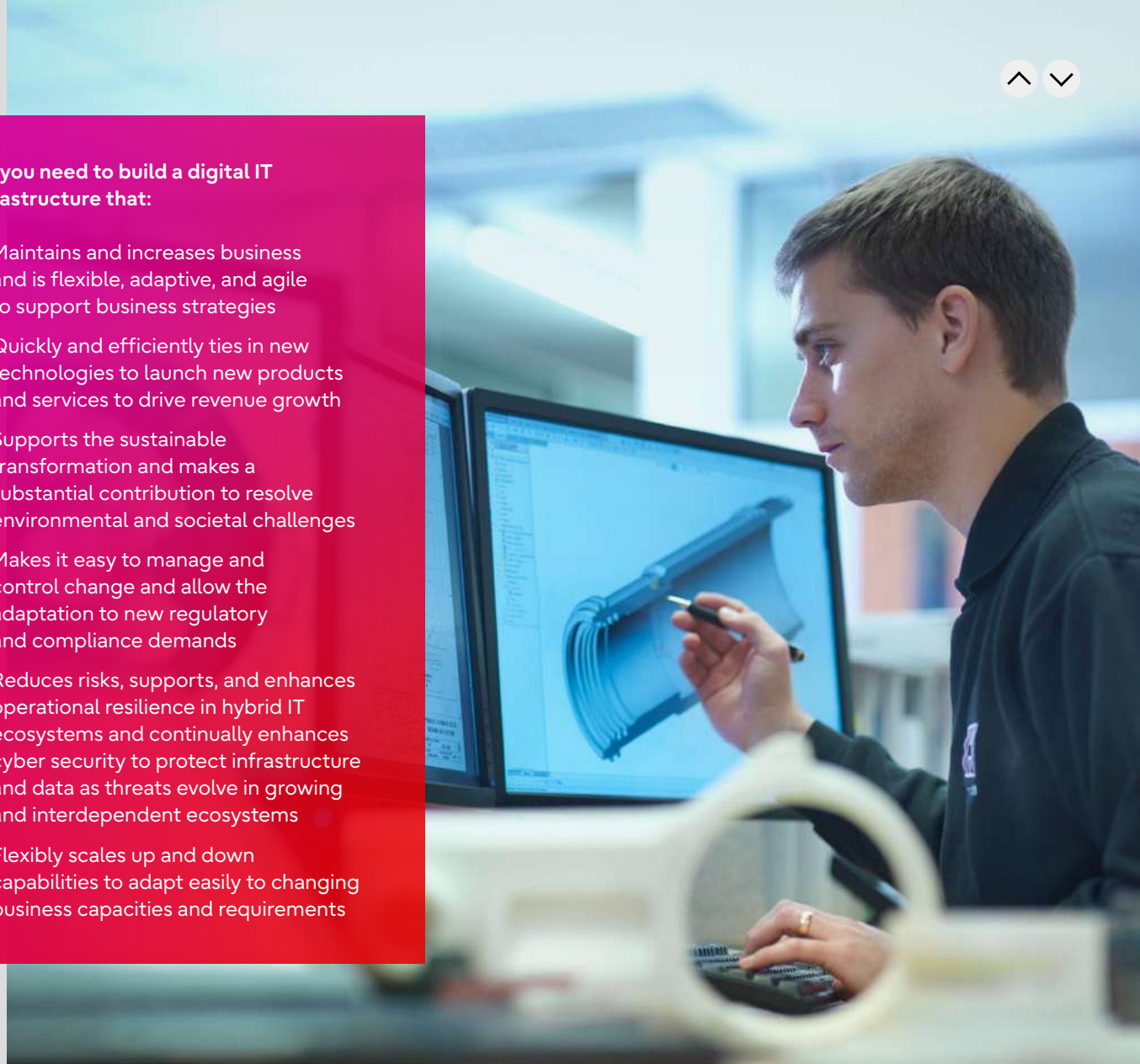
Resilience and rapid adaptability within a tailored ecosystem

Organizations need to connect and exchange data to a much higher degree – e.g. connect planning, procurement, and production to work on a common data source to identify gaps and opportunities and to rapidly adapt to changing needs and ensure that they create sustainable benefits for the entire organization.

Increased resiliency and fast adaptability are required to tackle, shape, and master the creative disruption – initiated by innovation and fierce competition as well as disruptive factors. It's important to ensure that you fully integrate cyber security right from the start because that is – it goes without saying - an essential element. It's how you build and maintain trust with not only your customers, but also all the other parts of your ecosystem. They all depend on the assurance of data privacy, and that both data and infrastructure are protected to guarantee an undisrupted service. All technologies and platforms, all interactions with suppliers, partners, customers need to be secured. That will be even more important as services become personalized to a much higher degree.

So, you need to build a digital IT infrastructure that:

- Maintains and increases business and is flexible, adaptive, and agile to support business strategies
- Quickly and efficiently ties in new technologies to launch new products and services to drive revenue growth
- Supports the sustainable transformation and makes a substantial contribution to resolve environmental and societal challenges
- Makes it easy to manage and control change and allow the adaptation to new regulatory and compliance demands
- Reduces risks, supports, and enhances operational resilience in hybrid IT ecosystems and continually enhances cyber security to protect infrastructure and data as threats evolve in growing and interdependent ecosystems
- Flexibly scales up and down capabilities to adapt easily to changing business capacities and requirements



Be able to cope with rapidly changing markets and customer needs

Data is, of course, all about insights. And data is also vital for collaboration. Manufacturers can't afford to act alone anymore. They are part of wider ecosystems which are facilitated by digital technologies and connectivity. It's no longer enough to focus on internal data flows or merely digitalizing internal processes. You must achieve close interactions with suppliers, partners, and customers through data. Creating, sharing, processing, analyzing, and acting on common sources of data. That's how you get closer to customers and innovate in ways that will achieve greater value in a changing world.

Measures you need to consider include:

- Seamless connectivity with a broad ecosystem of partners (providers, suppliers, customers) to achieve a better customer experience
- Precise insights and analytics of business and customer data to fuel business with enhanced capabilities like data analytics, Machine Learning and Artificial Intelligence
- Data privacy, data protection and infrastructure protection to minimize risk and protect your business from breaches and the associated disruption

Use end-to-end connectivity to foster smart adaptability

Enabling data to flow easily and securely is a key lubricant to everything manufacturers do. It's important to understand all data sources and enable everyone who needs to use that data to have easy and secure access to it. The exchange of data will then drive operational insights, help maintain production and reduce downtime, provide timely data for both changes in production as well as innovative new ways to be more efficient or create new products and services. Connecting modern workplaces is as important - as it allows employees to work from anywhere with best user experience.

Measures to consider in this area include:

- Strengthening the connections within your Enterprise Application landscape so that all areas are joined up and focused on innovation across the factory as well as innovation teams and customer relationship management
- Ensure that your infrastructure is tied-in with and can support new work approaches to enable employees, partners, providers, and customers to interact and share common data at speed and securely, irrespective of place, time zones with convincing user experience

Infrastructure makes *the* difference

Building an agile infrastructure as the foundation of both a digital manufacturing ecosystem and smart factories augmented by seamless supply chains and customer relationships is what will make the difference to any manufacturer.

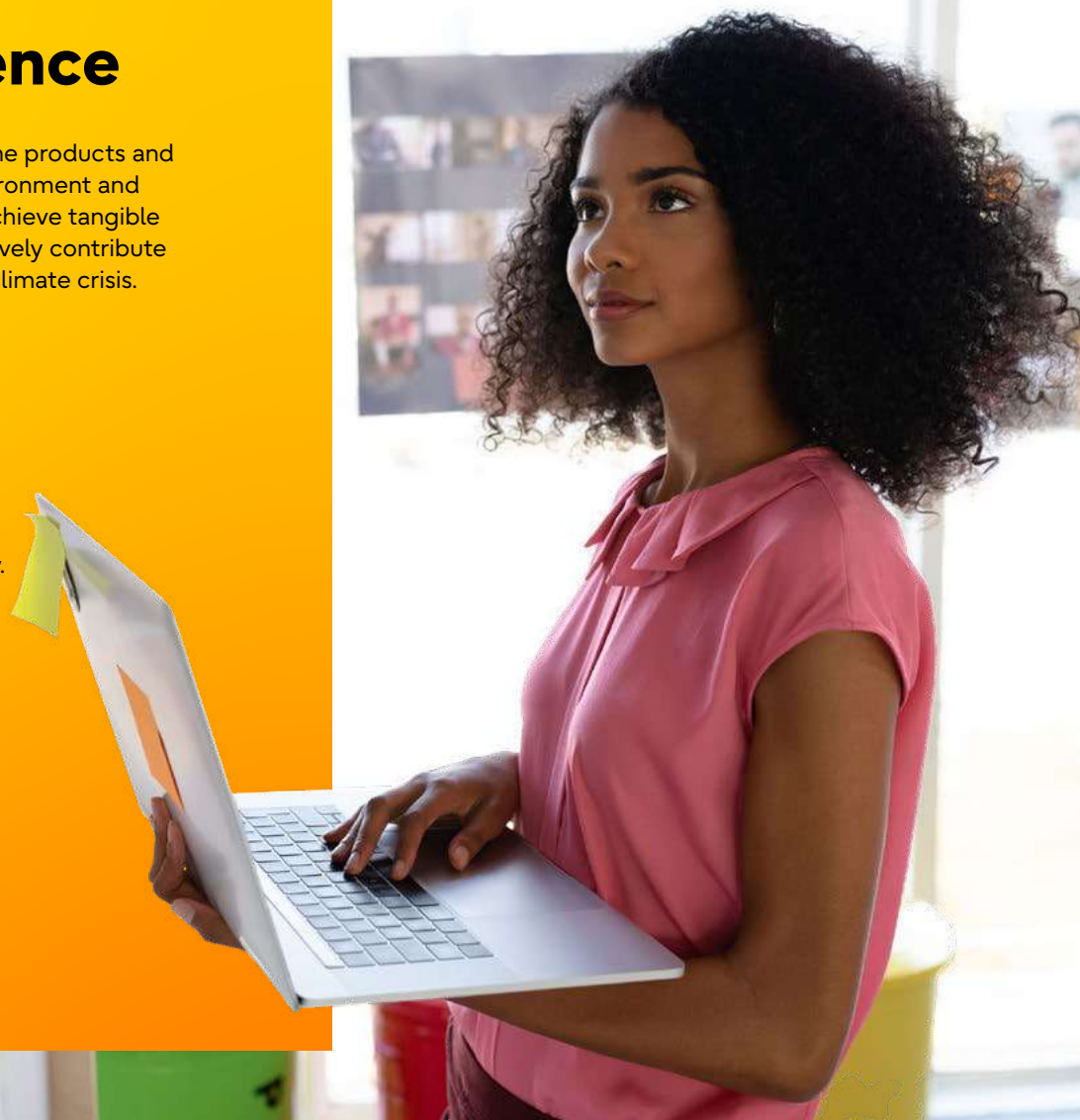
With transformational digital technologies based on an infrastructure that's been created with your specific priorities in mind, you can maximize the use of data and data analytics, rethink your supply chain, and build effective ecosystems while addressing employees and customers with a new range of employee and customer experience.

Co-creating new services based on leading technologies allows you to address evolving market behaviors – while security-by-design and built-in resilience optimize the reach in the market and address highest data privacy, data protection and infrastructure protection requirements.

As we move forward, it's clear that sustainability is going to underpin everything manufacturers do. Again, the right digital infrastructure will offer you a myriad ways in which you can mitigate the impact of your operations (and the products and services you provide) on the environment and peoples' lives. It's how you can achieve tangible carbon reductions which will actively contribute to global efforts to address the climate crisis.

Digital technologies offer both the insights you need to identify areas where carbon can be reduced, as well as clever ways to reduce water usage while minimizing the release of other by-products/chemicals. Data delivers sustainable transparency. Working with key partners within your ecosystem will extend the power of your green initiatives.

Talk to us about how you can leverage the power of Hybrid IT to deal with all those priorities and get ahead of what's next in manufacturing.



Why Fujitsu?

Manufacturers are required to adapt to the unpredictable and act with flexibility to continuously provide products and services that enhance people's lives. With our expertise, we are accelerating the creation of secure and resilient supply chains and a circular economy to achieve carbon neutrality. Fujitsu has been empowering people in the manufacturing industry for many years.

All things will be connected through digital touch points, and services and data will be connected beyond the boundaries of industries and companies. This requires a digital infrastructure that is safe and secure. We combine our longstanding experience as an ICT and digital transformation partner with revolutionary technologies such as artificial intelligence and high-performance computing to connect the entire supply chain with security and traceability. And we bring to bear our vast experience being a manufacturer ourselves.

Voice of the customer:

ORION

Orion wanted to deploy a cloud-based Data Science Workspace that would enable it to automate analysis, scaling to cope with complex projects and providing an intelligent platform to develop new products.

"Our existing on-premise data center services were unsuitable for this new Data Science Workspace initiative," explains Outi Anttila, Head of Core Services, Orion Corporation. "We evaluated the market and decided Microsoft Azure would be the ideal cloud platform, however, we needed an application development and managed cloud service partner to help with our project." Orion selected Fujitsu as its managed cloud service partner when Bitfactor was selected for application development vendor.

"Fujitsu worked tirelessly to create a robust Azure environment to host the Data Science Workspace, developed by a local Finnish partner, Bitfactor. Given the sensitive and confidential nature of much of the data, security was a paramount concern; Fujitsu was able to incorporate the existing on-premise multi-factor authentication and firewalls into the cloud solution to minimize risk, ensure data privacy and protect corporate IP," explains Outi Anttila, Head of Core Services, Orion Corporation.

"Fujitsu has delivered a dedicated and reliable Azure infrastructure for Data Science Workspace with better analytics of data and information, enabling an easier and more efficient collaboration," concludes Anttila.

Click here for more information

PROVENTIA

Fujitsu supports Proventia with a cloud service solution to collect production data on the use of public transport vehicles from different sources. The solution is built on Fujitsu's Event Processing IoT Platform (EPP), and it runs in a Microsoft Azure Cloud platform. The Fujitsu EPP is a high-performance real-time monitoring and rule processing engine, which reads different data flows and reacts to their values.

"Fujitsu is helping Proventia fight climate change, meet tighter air quality requirements in an agile manner, and develop better solutions." Jesse Salmi, Retrofit Sales and Project Manager, Proventia.

Click here for more information

Talk to us about how you can leverage the power of Hybrid IT to and get ahead of what's next in manufacturing, just visit:

www.fujitsu.com/global/services/hybrid-it/

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