

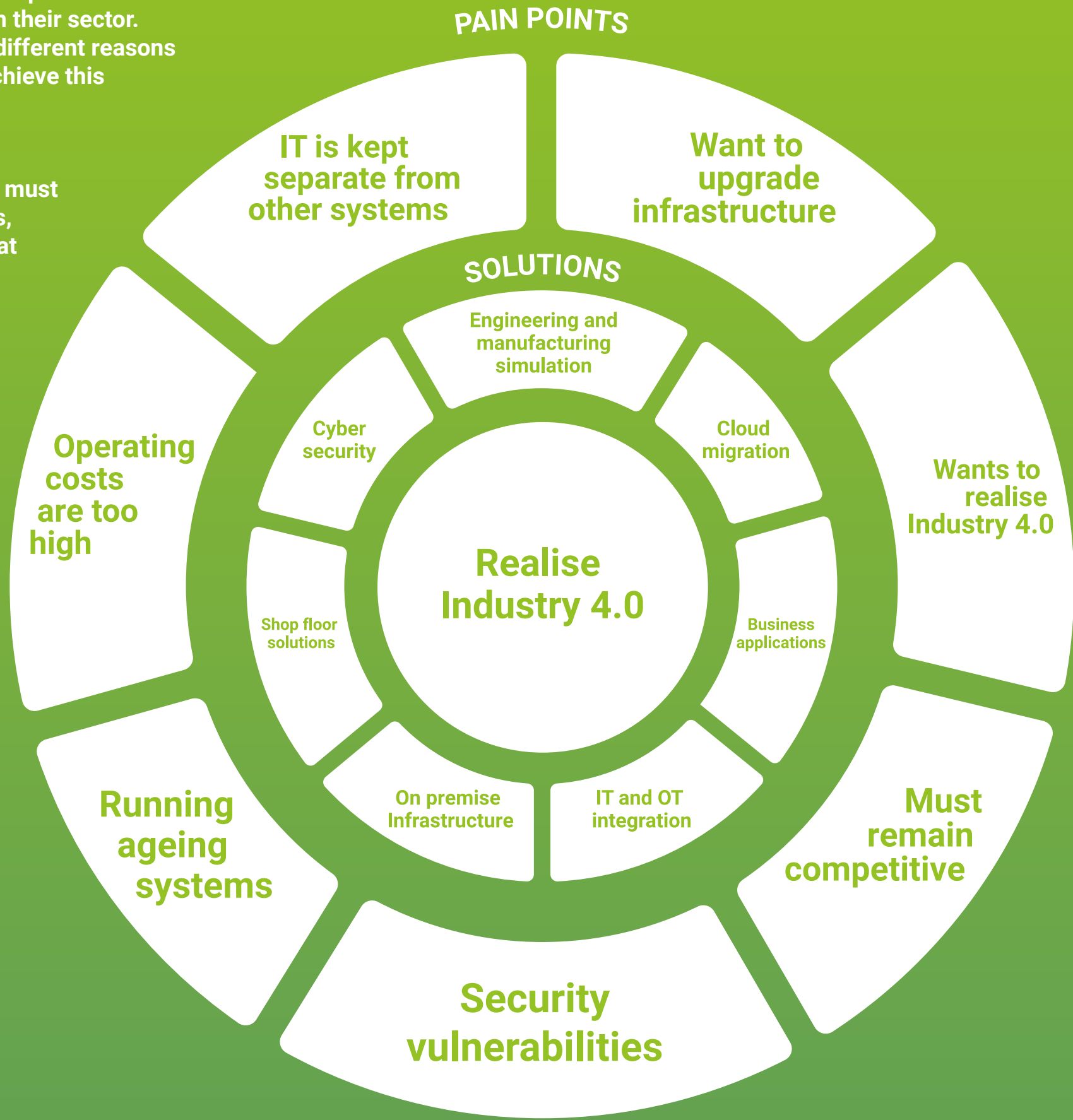


**Your digital
transformation journey
starts here**

The journey to digital transformation

Manufacturers are exploring how they can digitalise operations to reduce operating costs, improve productivity and remain competitive in their sector. Each business wants to digitalise for different reasons and will also take different steps to achieve this transformation.

To determine the steps to digital transformation for your business, you must consider existing systems, pain points, business goals and outcomes and what the business wants to prioritise.



Digital transformation

Since the term was first coined at Hannover Messe in 2011, manufacturing businesses have considered how they can realise Industry 4.0. This phase in the industrial revolution focuses on connecting the physical world with the digital world using automation to optimise manufacturing processes. Improved interconnectivity provides businesses with real-time insights into processes and people, enabling them to make more informed decisions about their business.

While manufacturers have been aware of Industry 4.0 for over a decade, few have taken the steps to fully digitalise their operations. Resistance to change is one of the most common barriers to digitalisation, with some businesses and employees happy with the status quo. Another challenge is selecting the right technologies and successfully integrating them into the business.

There's a common misconception that implementing Industry 4.0 requires businesses to invest in the latest, shiny equipment — in reality, digitalising operations shouldn't require a complete facility overhaul. Instead, manufacturers should review their current operations and outline key business objectives that they'd like to achieve from an upgrade. Once a business has worked out where it wants to be, it can work backwards to understand the steps it must take and technology it must integrate to realise Industry 4.0.

About Ripley Solutions

Established in 2016, Ripley Solutions works with businesses of all sizes to integrate IT infrastructure with plant equipment to digitalise factories.

With experience of delivering projects for FTSE 100 companies and small businesses alike, Ripley Solutions works with businesses of all sizes to design, develop and deploy future-ready IT and operational technology (OT) solutions. It drives digital transformation programmes, controls costs and prepares your business to meet the challenges of increased competition, customer demands and changing operational priorities.

Ripley Solutions works with customers to understand their individual requirements, by listening closely to what the customer wants and developing a deep understanding of their business. We then identify solutions to meet those requirements and implement them in the customer's business.

At Ripley Solutions, we know that every part of your business is connected. We work with you to understand what your business needs to succeed. Ripley Solutions will then design, install and commission tailored solutions, in both IT infrastructure and manufacturing technology, that seamlessly integrate with your existing operations.

Integrating IT and OT

Traditionally, companies treat IT and operational technology — the industrial systems keeping industrial facilities running — separately. These two areas are often managed by separate teams that rarely need to communicate. As a result, enterprise IT and industrial OT teams work well in their respective silos, but there is often tension between the two spaces.

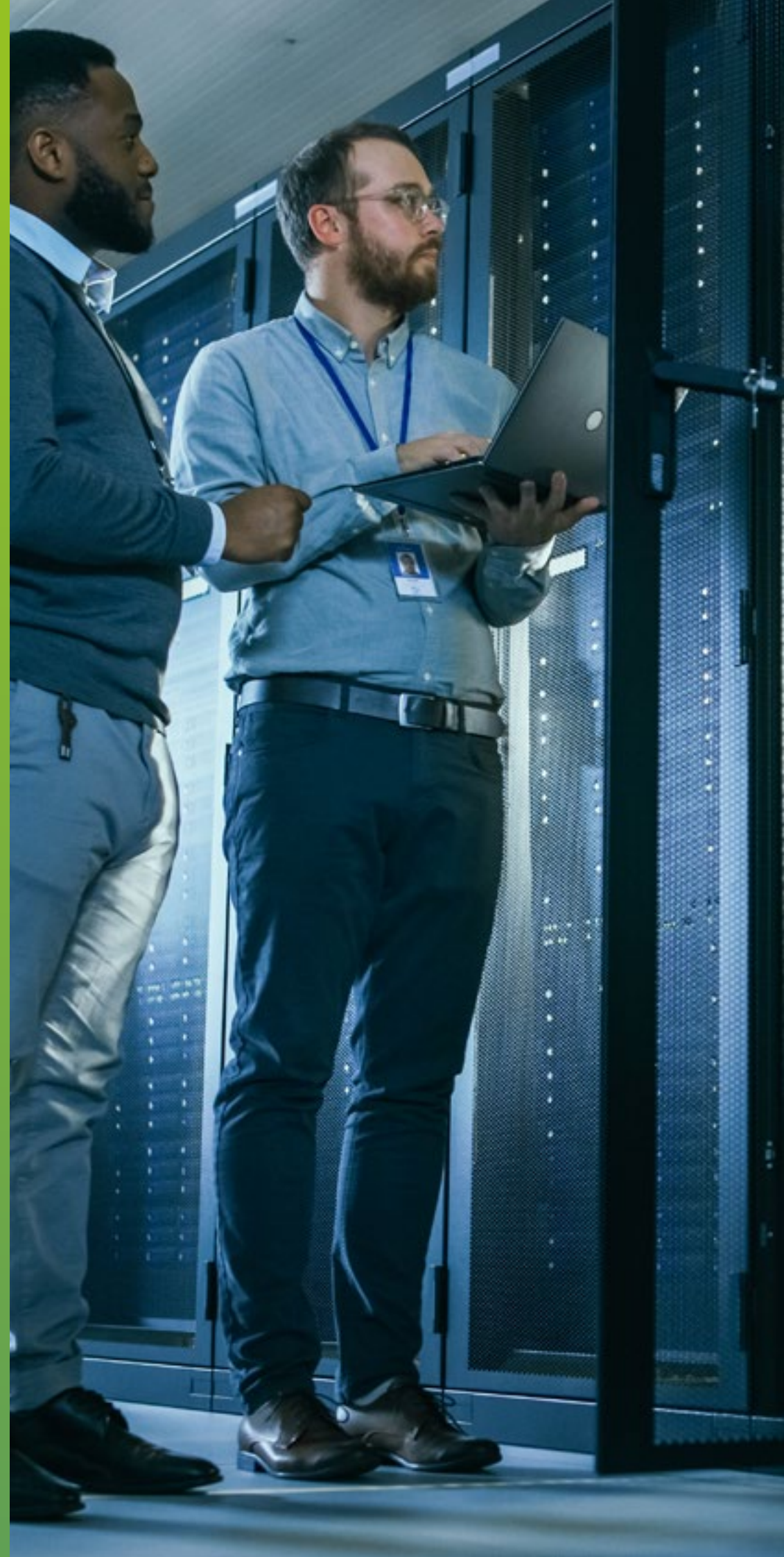
As more businesses aim to realise Industry 4.0 and digitalise their operations, they need connected equipment that will enable them to improve resource efficiency, enhance operations and remain competitive. As a result, manufacturing businesses are looking at how they can integrate the two systems to improve operations.

Why integrate?

IT and OT integration enables businesses to:

- 📡 Improve machine to machine communication — different systems can share data
- 📡 Improve accuracy — manufacturers can export and share real-time data instead of manually moving data
- 📡 Reduce cybersecurity risk — securing systems removes potential backdoors for hackers
- 📡 Improve communication between stakeholders

Ripley Solutions uses both its experience in IT and OT to assess current operations, offer tailored solutions based on the company's objectives and support integration.



Steps to successful integration

1 Cultural change
— encourage collaboration between teams that are traditionally separated

2 Set goals
— decide what the business wants to achieve from integration

3 Analysis
— review the current processes

4 Find solutions
— choose systems that will make the most positive impact on operations

On-premise infrastructure

Most businesses require some form of IT infrastructure to operate. Infrastructure can be deployed in the facility or in a cloud computing system and includes all the components needed to deliver IT services, such as hardware, software, operating systems and data storage. However, because it is not always visible, IT often operates in the background unnoticed — much like the plumbing in your house. Rather than letting IT operate in the background and only acting when something goes wrong, businesses should proactively review IT infrastructure to ensure it always meets the needs of the business.

Why upgrade?

- ⚙️ Does the current infrastructure suit employees?
- ⚙️ Can remote teams access what they need?
- ⚙️ Are your IT operating costs too high?
- ⚙️ Is the system unreliable?
- ⚙️ Is the business always fighting fires instead of thinking about the future?

Products include:

- ⚙️ Networks including industrial and wireless networks
- ⚙️ Servers
- ⚙️ Edge computing
- ⚙️ End user computing

Benefits include:



Reduce
operating
costs



Improve
infrastructure
reliability



Save time
for users



Streamline
processes



Improve
security

Cloud computing

Many businesses are discovering the benefits of migrating to the cloud. It gives businesses access to real-time data from anywhere, enabling them to identify potential issues and optimise operations.

Potential barriers

While the cost of cloud-based solutions is typically lower than traditional on-premise systems, we find that some businesses are paying too much for the cloud. Businesses can outsource all IT setup and maintenance to the cloud and should be paying for resources when they use them.

However, a report by Flexera Software LLC estimated that 30 per cent of enterprise spending on cloud infrastructure is wasted. This might be because the business hasn't chosen the best provider or are unaware of how to efficiently manage the service.

Ripley Solutions primarily works with:

Microsoft Azure

Office 365

Benefits:








Cyber-security

We regularly hear about data breaches and cyber-attacks on large enterprises.

A lot of smaller enterprises have the mentality that 'it'll never happen to me'. However, according to Verizon's 2020 Data Breach Investigations Report, 43 per cent of cyber-attacks target small businesses. All businesses must take cybersecurity seriously and remove vulnerabilities to prevent hacks.

Potential risks in the business

-  **Memory sticks used to store and transfer sensitive data can be lost or become infected and spread malware**
-  **Allowing remote workers to access company information without using a secure Wi-Fi network**
-  **Introducing advanced systems without considering cyber security creates backdoors that hackers can exploit**
-  **Ransomware**
-  **Phishing**

Leaving the business open to hackers can result in data losses and costly downtime. The risks are even greater if hackers can access operational technology — they can affect machinery operation and cause health and safety issues. Instead, businesses should regularly review their processes and discover where they can improve security.

Ripley Solutions can help to assess current infrastructure and identify any potential threats. It also helps provide businesses with end-to-end cyber security covering network, devices and machinery to improve security across the business.

Business applications

When digitalising operations and creating a system where IT and OT converge, manufacturers can use industrial software to create an integrated end-to-end process. Manufacturers can use these apps to harness real-time data and streamline decision making processes across the supply chain.

Solutions include:

Customer Relationship Management (CRM)

Compile data across different channels to manage customer interactions and data throughout the customer lifecycle

As a Microsoft partner we recommend Dynamics 365 Sales

Enterprise Resource Planning (ERP)

Collect data from multiple sources to help manage end-to-end business processes from order to invoice and manage financial aspects of the company's operations.

We primarily work with Microsoft Dynamics 365 Business Central

Product Lifecycle Management (PLM)

Manage every aspect of the product lifecycle, from idea to market. Track and share data at every stage to ensure traceability

Manufacturing and Engineering simulation

Use computer modelling to virtually test manufacturing methods, check processes and validate designs before production. Test different configurations during research and development to reduce costs and improve quality.

Perform structural and fluid analysis using FEA and CFD tools such as Ansys Mechanical, LS-Dyna and Fluent to simulate real-world conditions. Simulate the operation of CNC machines using software such as Vericut to analyse the movement of the tool path to check for collisions and find areas of inefficiency.

Benefits:



Reduced
operating time
and costs



Improved
communication
between
stakeholders



Reduced
waste

Shop floor systems

Shop floor systems are a set of software and tools used to track, schedule and report on the progress of work in a manufacturing plant.

Solutions include:

Manufacturing Execution System (MES)

Monitor and control intricate manufacturing systems to help simplify control over the whole system. Data can easily flow from the factory floor to management to enhance the communication channels across a business.

Industrial Internet of Things (IIoT) devices and digital twins

Gather data from a network of interconnected devices, instruments and sensors to gain insights into different processes, for example on predictive maintenance

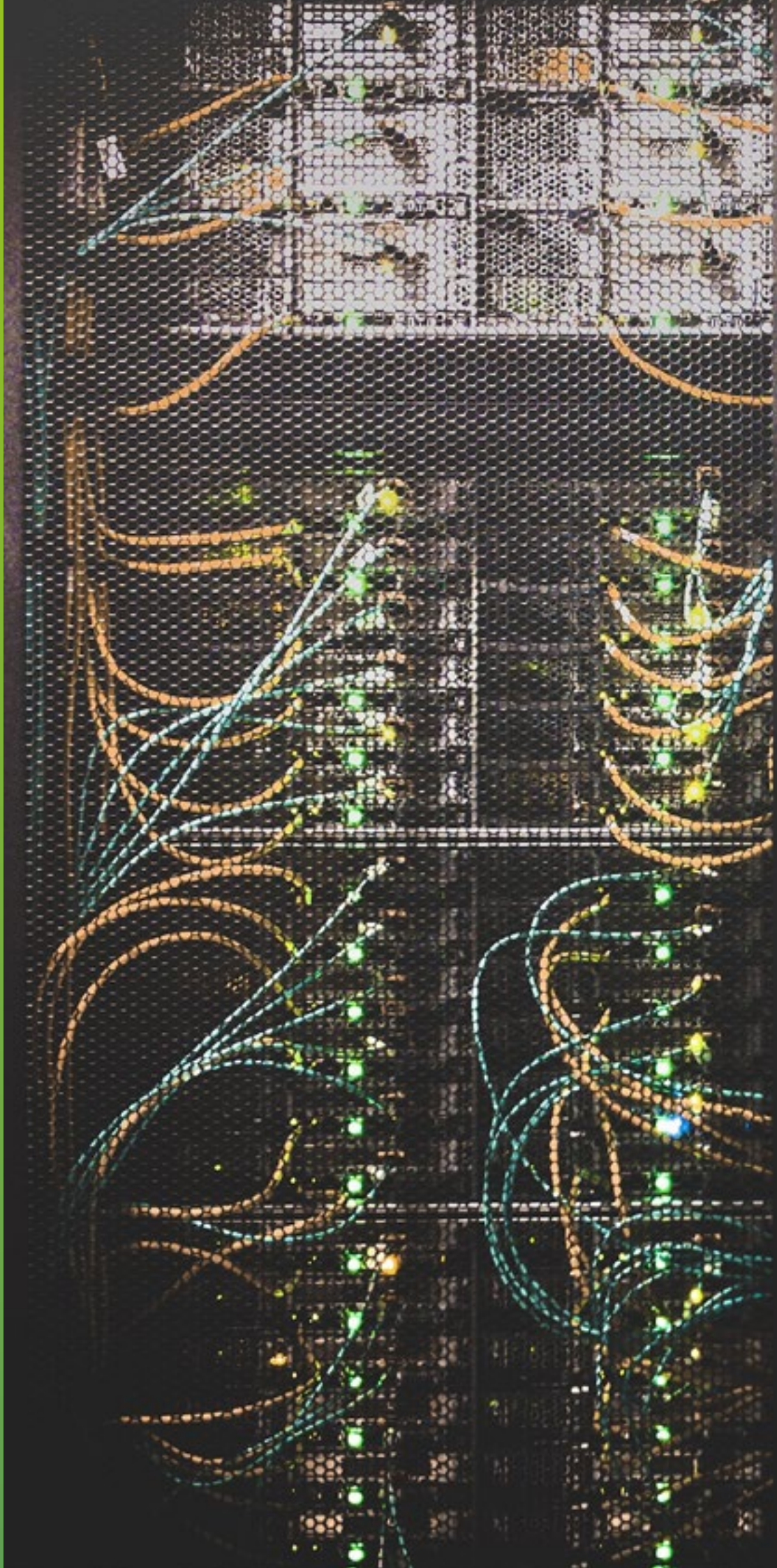
Industrial Automation - SCADA and PLCs

Monitor, gather and process real-time data to oversee and manage the entire manufacturing process. The system makes logic-based decisions to control system functions and automate processes.

We work with OEMs such as Siemens and Allen Bradley

Shop floor data capture

Gather real-time data from the shop floor on parameters such as real-time job progress, accurate product costing and productivity analysis



Benefits:



Reduce costs



Improve communications



Streamline processes



Reduce waste



Improved customer experience



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