

The connected manufacturing enterprise

How leading manufacturers are creating visibility,
efficiency and operational control





Introduction

Manufacturing has always been a complex business. Balancing production targets, controlling costs, maintaining quality standards, managing suppliers, meeting customer expectations, and keeping operations running smoothly requires constant coordination across multiple functions. What's changed in recent years is the pace at which manufacturers are expected to respond.

Customer demand can shift quickly. Supply chains are more interconnected and vulnerable to disruption. Labour shortages continue to affect operations. Margins remain under pressure. At the same time, leadership teams are being asked to improve productivity, reduce waste, and support long-term growth.

In this environment, operational visibility has become increasingly important. Many manufacturers find themselves operating with information spread across multiple systems, departments, sites, and suppliers. Critical decisions often depend on data that is delayed, incomplete, or difficult to access. The result is a business that spends more time reacting to problems than anticipating them.

This is why more manufacturers are focusing on creating connected enterprises, bringing together people, processes, systems and data to provide greater visibility, stronger control and better decision-making across the organisation.

This guide explores what a connected manufacturing enterprise looks like and how organisations can use greater visibility and integration to improve performance throughout the value chain.

Why manufacturing complexity is increasing

Manufacturing organisations today face challenges that would have been difficult to imagine a decade ago.

Many are managing:

- Global supplier networks
- Complex product portfolios
- Multiple production sites
- Rising customer expectations
- Regulatory requirements
- Increasing operational costs
- Workforce pressures
- Demand volatility

As organisations grow, operational complexity often grows with them. Processes evolve over time. Different sites introduce local variations. Teams develop workarounds to solve immediate challenges. New technology is introduced to address specific problems.

While each decision may make sense in isolation, the result can be a fragmented operating environment where visibility becomes increasingly difficult. Without clear visibility, leaders often struggle to gain a complete view of performance across the business.

What is a connected manufacturing enterprise?

A connected manufacturing enterprise is one where information flows seamlessly across the organisation. Instead of operating in isolation, departments and functions work from a shared understanding of performance, priorities, and objectives.

Key areas are connected, including:

- Production
- Supply chain
- Procurement
- Inventory management

Quality

Maintenance

Logistics

Finance

This allows decision-makers to access the information they need when they need it. A connected enterprise enables organisations to move from reactive management to proactive decision-making. Problems can be identified earlier. Opportunities can be acted upon faster. Performance can be managed more effectively.

The five foundations of a connected manufacturing enterprise

1. End-to-end operational visibility

Visibility is the foundation of operational control.

Many manufacturers have access to large volumes of data but struggle to turn that information into meaningful insight. Important information often exists in multiple locations, making it difficult to answer key questions quickly.

For example:

Which production lines are underperforming?

Where are supply chain risks emerging?

Which suppliers require attention?

What inventory is available across the network?

Which customer orders are at risk?

Greater visibility provides leaders with a clearer picture of operational performance and supports faster, more informed decisions. The ability to see across the organisation often creates opportunities for improvement that were previously hidden.

2. Breaking down organisational silos

One of the biggest obstacles to manufacturing performance is the existence of silos. Production teams focus on output. Procurement focuses on cost. Supply chain teams focus on availability. Maintenance focuses on asset reliability.



While these objectives are important, disconnected goals can sometimes create unintended consequences. For example, efforts to minimise inventory may affect production flexibility, while procurement savings might introduce supply chain risk.

Connected organisations create more alignment between functions. When teams share information and objectives, decision-making improves and operational performance becomes more predictable.

3. Data-driven decision making

Manufacturing leaders are making decisions in increasingly complex operating environments. Historical experience remains valuable, but today's challenges require access to reliable, current information.

Data-driven organisations use operational insight to support decisions relating to:

- Production planning
- Capacity management
- Inventory control
- Maintenance activities
- Supplier performance
- Workforce allocation

The objective is not simply to collect more data. It is to provide the right information to the right people at the right time. Better decisions are typically the result of better visibility.

4. Improved planning and coordination

Manufacturing performance is often determined by how effectively different parts of the business work together. When planning processes are disconnected, organisations may experience:

- Production delays
- Material shortages
- Excess inventory



Inefficient scheduling

Increased operational costs

A connected operating model improves coordination across planning activities. This enables teams to balance demand, capacity, inventory, and resources more effectively. Stronger coordination helps reduce surprises and creates greater operational stability.

5. Continuous improvement

The most successful manufacturers never view operational performance as a finished project. They treat improvement as an ongoing process.

Creating a connected enterprise helps organisations identify opportunities for:

Efficiency gains

Productivity improvements

Cost reduction

Waste elimination

Quality enhancements

Access to reliable information allows leaders to make improvements based on evidence rather than assumptions. Over time, even small improvements can create significant business value.

The hidden cost of disconnected operations

Many organisations underestimate the impact of disconnected processes and systems. Common consequences include:

Duplicate effort

Manual reporting

Delayed decision-making

Inventory inaccuracies

Reduced productivity

Increased operational risk

Inconsistent performance measures

These issues often develop gradually and become accepted as part of daily operations. However, their cumulative impact can be significant. Manufacturers that address operational fragmentation often uncover opportunities to improve efficiency and reduce costs without major changes to their operating model.

Improving production performance through visibility

Production performance remains one of the most important indicators of manufacturing success. However, improving performance requires understanding what is happening on the shop floor in real time.

Leaders need visibility into:

Production output

Downtime events

Capacity utilisation

Quality performance

Resource availability

With accurate information, organisations can identify bottlenecks earlier, respond faster to issues, and make more effective planning decisions. Visibility creates control. Control creates performance.

Creating greater supply chain transparency

Few manufacturing organisations operate independently. Performance is heavily influenced by suppliers, logistics providers, and external partners. A lack of visibility beyond the factory walls can create significant risk.

Supply chain transparency allows organisations to:

Monitor supplier performance

Identify potential disruptions

Improve inventory planning

Strengthen customer service

Reduce operational uncertainty

The ability to see further across the value chain often results in better operational outcomes.

Connecting maintenance and production

Maintenance and production have historically operated as separate disciplines. However, their objectives are closely linked. Unplanned downtime remains one of the most significant contributors to lost productivity.

A connected approach allows maintenance teams to:

Prioritise activities based on operational impact

Improve asset reliability

Reduce downtime

Support production targets more effectively

When maintenance and production work from the same information, operational performance often improves.

Building a culture of operational excellence

Technology can improve visibility, but operational excellence depends on people. Successful manufacturers create cultures that encourage:

Collaboration

Accountability

Continuous improvement

Data-driven thinking

Shared objectives

The strongest manufacturing organisations understand that technology is only part of the solution. Long-term success requires people across the business to embrace new ways of working and use information effectively.

Measuring the performance of a connected enterprise

Manufacturers should establish clear performance indicators to understand whether improvements are being realised. Examples may include:

Overall Equipment Effectiveness (OEE)

Production throughput

Schedule adherence

Inventory accuracy

Supplier performance

On-time delivery

Downtime levels

Quality metrics

These measures provide valuable insight into operational performance and help identify areas requiring attention. What gets measured is far more likely to improve.

What leading manufacturers do differently

Across the manufacturing sector, high-performing organisations tend to share several common characteristics. They:

Prioritise visibility across the operation.

Break down functional silos.

Use data to support decisions.

Focus on continuous improvement.

Align planning and execution.

Create stronger collaboration between teams.

Most importantly, they recognise that operational excellence depends on how effectively information flows throughout the business.

Looking ahead

Manufacturing will continue to evolve. Supply chains will become more interconnected. Customer expectations will continue to rise. Competition will increase.

The organisations best positioned for success will be those capable of making fast, informed decisions based on accurate information and a clear view of performance across the enterprise. Connected operations provide the foundation for achieving this.



Final thoughts

The future of manufacturing belongs to organisations that can see more, understand more, and respond faster. Creating a connected manufacturing enterprise is not simply about implementing new systems. It is about improving visibility, strengthening collaboration, removing inefficiencies, and enabling better decision-making across the business.

Manufacturers that succeed in creating these connections often benefit from greater operational control, improved performance, stronger resilience, and a more sustainable platform for growth. In an increasingly complex manufacturing landscape, connection is becoming a competitive advantage.

About TCT

At TCT, we help manufacturers create the operational foundations needed to support growth, efficiency, and transformation. From SAP-enabled business change and operational readiness to programme assurance, process optimisation, and benefits realisation, we help organisations improve visibility, strengthen performance, and unlock measurable business value.

Looking to create a more connected manufacturing operation? Speak to TCT about how we can help improve visibility, operational control, and long-term performance across your enterprise.

©TCT



Get in touch today
theconfigteam.com