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# Digital Transformation for Manufacturers

Your Guide

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Hi!

I'm Martin Griffiths, and I'm here to assist manufacturing professionals who wish to implement modern digital manufacturing systems to enhance quality, productivity and customer satisfaction in their businesses.

This guide is tailored to provide you with a roadmap and clear steps for effectively utilising a Manufacturing Execution System (MES) to implement a digital manufacturing transformation.





# Enhancing Your Manufacturing Business

Welcome to this guide on Implementing a Digital Manufacturing Transformation with Manufacturing Execution Systems (MES).

In this guide, I'll take you through five essential steps that will empower you to leverage MES and boost your business's quality, productivity and customer satisfaction.

By the end of this journey, you'll have a solid plan for implementing an MES and achieving the highest possible impact on your business.

This will free up your time, allowing you to focus on strategic growth and development.

# Discover the Digital Transformation Quadrant

## 1. Design a Strategic Plan

Create a comprehensive plan for implementing automated data collection and efficient processes.

## 2. Standardise for Consistency

Establish uniform processes using visual work instructions, SOPs, and calculated standard times.

## 3. Prevent Errors Effectively

Explore techniques such as "Poka Yoke" to eliminate mistakes and implement alert systems for proactive error prevention.

## 4. Track KPI's & Implement Feedback

Manage performance using data-driven metrics & Implement feedback loops to identify issues, make necessary adjustments, and drive constant improvement



# The Problem with Paper

Many manufacturing control systems relying on paper or Excel encounter significant challenges:

- ✗ Reliance on expert operators leads to inconsistency in producing high-quality products.
- ✗ Delayed access to production information hampers decision-making, causing production, delivery, and purchasing delays.
- ✗ Scalability issues hinder keeping customers satisfied as your business grows.

If you're experiencing any of these issues, read on to discover a path to a better future.

# The Power of Manufacturing Execution Systems (MES)

An MES plays a pivotal role in controlling, tracking, and documenting the manufacturing process.

It bridges the gap between ERP systems and human operators or SCADA systems, offering real-time insights into the production process.

MES empowers manufacturers to produce better quality products with greater efficiency.

Companies adopting MES witness improved productivity, accuracy, and safety, resulting in superior product quality and world-class productivity levels.



# How MES Works within a Business

ERP systems manage the main business processes, including finance, procurement, HR & sales

**ERP / MRP System**

**Product Lifecycle Management (PLM) System**

PLM systems manage a product from design, development, service and disposal

The core of a MES includes work order tracking, work instructions, travellers, quality control and traceability

**Manufacturing Execution System (MES)**

**Ovens**

**Assembly**

**Inspection**

**Tooling**

Manufacturing processes and machinery connect to MES for control and data collection

A woman with brown hair, wearing a blue long-sleeved shirt and a high-visibility yellow safety vest, is looking down at a handheld device. The background is a blurred industrial or warehouse setting with shelves and equipment.

# 01.

## Create a Strategic Plan

Efficient data collection is a cornerstone of success.

While paper-based and Excel systems often lack detailed and up-to-date information, automation solves this issue.

Having accurate, automated data is crucial for identifying quality and productivity issues.

Quantifying metrics such as downtime, labour time, and errors allows you to address high-impact challenges.



# 01.

## Create a Strategic Plan

- ☐ Establish the key goals and success criteria for your digital transformation – what will success look like?
- ☐ Map out your manufacturing processes
- ☐ Establish the key touch points of data collection within each process
- ☐ Review the options of data collection at each touch point
- ☐ Assign a priority level to each section of the manufacturing process



# 01.

## Create a Strategic Plan



*Remember, you don't need to boil the ocean and tackle all areas of the business in one go.*

*Start in one or two areas first, you'll gain some quick wins, enjoy the benefits and gain momentum to move onto the next phase of the project.*





# 02.

## Standardise for Consistency

The more processes are standardised, the less variation in the manufacturing process.

Less variation leads to higher quality and efficiency.

It's worth bearing in mind that there is always room for improvement, and there should be opportunities for feedback from the shop floor on the manufacturing process.

But wherever possible, that feedback should be incorporated into standard manufacturing process. So an easy way of distributing new or updated processes is essential.



## 02.

### Standardise for Consistency

- ☐ Establish repeatable processes using visual work instructions, product routings, and SOPs.
- ☐ Calculate standard times to accurately cost jobs and monitor efficiency.
- ☐ Track efficiency with Time & Motion studies or shop floor data capture.



# 03.

## Prevent Errors

Preventing errors before they occur can have massive benefits on both quality and productivity.

If something is made right the first time, it is likely to be a much more reliable product for your customers than if mistakes happen, then are fixed, as the fix can often introduce unintended consequences.

Preventing rework also has an enormous impact on productivity, as it can be extremely destructive to the flow of the manufacturing process and consume disproportionate resources to resolve.



## Prevent Errors

- ☐ Implement "Poka Yoke" techniques to eliminate mistakes by redesigning products or processes.
- ☐ Employ Alert & Verification systems for critical processes, enhancing operator awareness.
- ☐ Implement functional tests, visual inspections, or smart cameras to ensure errors are caught early if they do happen.





## Track KPI's

What gets measured, gets improved. Once you have set goals and made process improvements, you need to start measuring the progress towards achieving those goals. This gives you the opportunity to course correct if you're making less progress than expected, and also the chance to congratulate the team when good progress is being made.



# 04.

## Track KPI's

- ☐ Manage by results: Set goals and track performance towards achieving them.
- ☐ Utilise good data collection methods and standard processes to track KPIs.
- ☐ Establish a regular meeting rhythm to monitor progress and take immediate action.



# Ensure Success Through Feedback

# 05.

Things change and processes evolve, so make sure there is an easy way to collect feedback from all stakeholders within the manufacturing process.

Create a process where the feedback can be reviewed quickly and a decision made on whether update the manufacturing process.

Make sure to update the stakeholders whether the feedback has been implemented, or if not, why not.



A woman in a warehouse setting, wearing a yellow safety vest over a light blue shirt, is giving a high-five. She is smiling and looking upwards. The background shows warehouse shelving and other workers in the distance.

# 05.

## Ensure Success Through Feedback

- ☐ Implement feedback loops to capture insights from operations.
- ☐ Analyse feedback to identify areas for improvement and innovation.
- ☐ Continuously adjust processes based on feedback for continuous improvements.



# Ready to Transform?

Implementing the strategies in this guide will help you plan the integration of a digital MES into your operations, ultimately improving productivity.

By adopting these practices, you'll be equipped to manage a skilled team and consistently deliver high-quality products with exceptional productivity levels.

If you'd like to make progress towards a Digital Transformation faster, book a call today with one of our digital manufacturing experts and embark on your transformation journey!

Are you ready to take your manufacturing to the next level?

To book a call with one of our specialists, visit:  
**[www.metisautomation.co.uk/digital-transformation](https://www.metisautomation.co.uk/digital-transformation)**  
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