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checklist

# A practical checklist for AI in manufacturing

Start small. Solve something real. Scale what works.

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The home of this guide, with a summary and related reading: nickleeder.com/resources/practical-ai-checklist-for-manufacturers/



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# Foreword

## If you've ever sat through a presentation about AI in manufacturing and come away thinking, "Nice in theory, but not for us", you're not alone.

For many mid-size manufacturers, AI has felt out of reach: wrapped in jargon, tied to big budgets, or pitched as a complete transformation rather than a practical tool.

This checklist is designed to change that.

It's not about strategy documents or technical deep-dives. It's a practical guide to help you start small, solve something real and build momentum. Because the truth is: AI isn't just for the top 1% of manufacturers anymore. The tools are accessible. The use cases are proven. And the results (less downtime, better quality, more predictable output) are already being delivered in factories like yours.

Whether you're an Operations Director, Plant Manager or Engineering Lead, this checklist will help you ask the right questions, avoid common traps and build confidence with your first, or next, AI project.



*It's not about doing AI. It's about doing what you already do, smarter.*



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# Your practical AI checklist for manufacturers

Seven steps, in order. Work through them for one problem at a time.



### AI in manufacturing, practically

In this checklist, AI is a practical tool aimed at one real, recurring and measurable problem, such as downtime, scrap or energy waste, rather than a complete transformation.

## 01

### Start with a real problem

Not a technology.

## 02

### Check your data foundations

Useful data beats big data.

## 03

### Find the right tool for the job

Built for manufacturers like you.

## 04

### Define what success looks like

Set a clear, simple target.

## 05

### Get the right people involved

AI adoption is a team sport.

## 06

### Pilot fast. Learn fast.

Momentum matters more than perfection.

## 07

### Have a plan for scaling if it works

Build to scale from day one.



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# 01 Start with a real problem, not a technology

- ◯ What's one issue that's wasting time, money or causing frustration every week?
- ◯ Is this problem recurring and measurable? (For example, downtime, scrap, energy waste.)
- ◯ Would solving this make a visible difference in performance or morale?



### Tips and tricks

Focus on a pain point that's small enough to test, but big enough to matter.

# 02 Check your data foundations

- ◯ Do you already collect data related to this problem? (For example, sensor logs, ERP or MES history.)
- ◯ Is the data available digitally, or could it be collected with minimal effort?
- ◯ Is the data reasonably clean, consistent and time-stamped?



### Tips and tricks

You don't need "big data". You just need "useful data".



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## 03 Find the right tool for the job

- ◯ Will this AI tool integrate with your existing systems (MES, SCADA, ERP)?
- ◯ Is the interface simple enough for your operations team to use?
- ◯ Can you get started with minimal set-up, ideally no code or low code?
- ◯ Does the vendor offer support for onboarding and scaling?



### Tips and tricks

Avoid generic platforms. Choose tools built for manufacturers like you.

## 04 Define what success looks like

- ◯ What's your baseline? (For example, current downtime rate, scrap percentage, energy usage.)
- ◯ What would a "win" look like in 30 to 90 days?
- ◯ Can you track this using your existing reporting methods?



### Tips and tricks

Set a clear, simple target. If you can't measure it, you can't prove it worked.



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## 05 Get the right people involved

- ◯ Have you involved operators or maintenance staff from the start?
- ◯ Is there a clear project owner, someone who'll drive this day to day?
- ◯ Are IT or engineering aware and supportive?



### Tips and tricks

AI adoption is a team sport, especially on the shop floor.

## 06 Pilot fast. Learn fast.

- ◯ Can you set up and test this within 30 days?
- ◯ Do you have time in your next shift schedule to trial it in a live setting?
- ◯ Is there a feedback loop to tweak and improve during the pilot?



### Tips and tricks

Start where you can move quickly. Momentum matters more than perfection.



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# 07 Have a plan for scaling if it works

- ◯ Can the solution be rolled out to other lines, teams or sites?
- ◯ What training or change management would be needed?
- ◯ Do you have a budget or business case for wider adoption?

## Tips and tricks

Don’t get stuck in “pilot purgatory”. Build to scale from day one.




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# Are you ready?

- ◯ Start with a real problem, not a technology
- ◯ Check your data foundations
- ◯ Find the right tool for the job
- ◯ Define what success looks like
- ◯ Get the right people involved
- ◯ Pilot fast. Learn fast.
- ◯ Have a plan for scaling if it works



**If you can tick most of these boxes, you're ready.**

No jargon. No drama. Just a practical start to using AI in your operations.

## About Nick Leeder & Co

Nick Leeder & Co is a UK-based, multi-award-winning advisory and coaching business that works exclusively with manufacturing and industry leaders to transform their businesses' operations and improve operating performance and efficiency.

If you enjoyed this guide, visit our website or subscribe to Beyond the Buzzwords, our weekly newsletter.



**Talk to us about your first, or next, AI project**

A short conversation is often enough to find the right problem to start with.

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# Questions this guide answers

## Where should a manufacturer start with AI?

With one real problem that wastes time or money every week, is recurring and measurable, and would make a visible difference if solved.

## Do you need big data to use AI in manufacturing?

No. *You* need useful data: data related to the problem, available digitally or easy to collect, and reasonably clean, consistent and time-stamped.

## How long should an AI pilot take?

Aim to set up and test within 30 days, define what a win looks like in 30 to 90 days, and keep a feedback loop running during the pilot.

## How do you avoid AI pilot purgatory?

Plan for scaling from day one: check the solution can roll out to other lines or sites, plan training and change management, and have a budget or business case for wider adoption.

# About the author

Nick Leeder is the founder of Nick Leeder & Co. An engineer by background, he has led, and been accountable for, transformation programmes in senior management roles at Dyson, SKF and Philips, across Europe, North America and Asia. He is certified in the Smart Industry Readiness Index (SIRI) and its CoSIRI framework, and is recognised by organisations including the World Economic Forum. Nick Leeder & Co is a multi-award-winning advisory and coaching business that helps manufacturing leaders turn enabling technology into measurable operational results.



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# Complexity delivers nothing.

At Nick Leeder & Co, we exist to restore clarity, confidence and control for manufacturing leaders navigating digital transformation.

Our mission is to help industrial businesses unlock the real value of enabling technologies, not through hype, but through practical action that improves productivity, profitability and sustainability.

We have seen too many businesses fall into the pilot trap. Too many strategies built on buzzwords instead of business outcomes. We believe manufacturers deserve better. So we help leaders cut through the noise, uncover what really matters and build a transformation path they can trust, so they get results that stick.

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