Tangle

A PRACTICAL PLAYBOOK FOR MANUFACTURERS

The AI-Powered Job Shop.

Work smarter, not harder. Where AI actually earns its keep on the shop floor, and how to get there.

INSIDE **The three hidden factories** · **A day with Milo** · **A 90-day roadmap**

Scan to take the AI Readiness Assessment

What’s Inside

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Introduction

Executive Summary

Manufacturing has always evolved through innovation. From CNC machining and CAD/CAM to robotics, lean manufacturing and cloud ERP, every generation of technology has enabled manufacturers to produce more, waste less and compete more effectively.

Artificial intelligence represents the next stage of that evolution.

Unlike previous technology shifts, AI is not about replacing machinery or redesigning production processes. Its greatest impact is helping people work smarter: reducing repetitive administration, making operational knowledge instantly accessible and supporting better decisions throughout the business.

For job shops, the opportunity is particularly significant.

Every day, estimators search for previous quotes, engineers look for similar jobs, production managers chase updates, buyers monitor shortages, and customer service teams answer the same questions repeatedly. Leadership teams spend hours compiling reports before they can begin making decisions.

These activities are essential, but they don’t create value in themselves. They consume time that experienced people could spend solving customer problems, improving production and growing the business.

The most successful job shops over the next decade won’t simply invest in AI technology. They’ll redesign the way work gets done. They’ll capture organizational knowledge instead of relying on individuals. They’ll automate routine administration. They’ll give employees instant access to trusted information. Most importantly, they’ll create an environment where continuous improvement becomes part of everyday operations.

This playbook is written for manufacturing leaders who want to understand what that future looks like. It isn’t a guide to artificial intelligence technology. It’s a practical guide to building an AI-powered job shop.

Inside you’ll discover:

- Why AI matters specifically to job shops.
- Where AI creates immediate operational value.
- The characteristics of an AI-ready manufacturing business.
- Common myths that prevent organizations from getting started.
- What working alongside AI looks like in practice.
- A practical roadmap for introducing AI into your business.

Whether you’re exploring AI for the first time or building on existing digital initiatives, this guide will help you focus on business outcomes rather than technology hype.

Because the advantage won’t go to businesses that simply collect more data. It will go to businesses that turn information into action, every single day.

What You’ll Learn

By the end of this playbook you’ll understand:

- Why job shops are uniquely positioned to benefit from AI.
- Which business processes deliver the fastest return.
- How AI complements skilled people rather than replacing them.
- Why ERP is becoming the operational foundation for AI.
- How manufacturers can adopt AI without disrupting day-to-day operations.
- The practical first steps toward becoming an AI-powered job shop.

KEY TAKEAWAY

AI isn’t replacing skilled manufacturing teams. It’s removing repetitive work, making knowledge accessible and helping people make better decisions. The manufacturers who embrace this shift early will create a lasting competitive advantage.

CHAPTER 01

The Three Hidden Factories Inside Every Job Shop

Every job shop runs three factories at once. Only one makes parts, and it is the one that already gets all the attention.

Walk through almost any job shop and you'll see the same thing. Machines cutting metal. Materials arriving. Operators building parts. Jobs moving through production.

This is the factory everyone can see. It's where manufacturers invest millions in machinery, equipment and continuous improvement.

But every successful job shop is actually running three factories. Only one of them produces parts.

Factory One: The Production Factory

This is the visible factory. It contains your machines, production schedules, work centers, inventory and people.

Most operational improvement initiatives focus here: reducing setup times, improving throughput, increasing machine utilization, minimizing waste.

For decades, manufacturers have become exceptionally good at improving this factory.

Factory Two: The Administration Factory

The second factory is much harder to see. Every day, people spend hours on work like this:

- Searching for drawings.
- Looking up previous quotations.
- Updating spreadsheets.
- Chasing job status.
- Answering customer inquiries.
- Creating reports.
- Processing purchase orders.
- Following up suppliers.
- Preparing production meetings.
- Moving information between systems.

None of these activities produce anything, yet they consume hundreds of hours every month. In many job shops, this invisible factory has quietly become one of the largest consumers of skilled people's time.

Factory Three: The Knowledge Factory

The third factory is the most valuable, and the most vulnerable. It exists inside people's heads.

The estimator who knows which jobs made money. The production manager who spots problems before anyone else. The buyer who knows which supplier always delivers. The machinist who's solved the same problem dozens of times. The engineer who remembers a similar part from five years ago.

This knowledge has been built over decades. Unfortunately, it often leaves the business one retirement, resignation or holiday at a time.

When knowledge isn't captured, every new employee starts from scratch. Questions get asked repeatedly. Mistakes get repeated. Decisions take longer. The business becomes increasingly dependent on a small number of experienced individuals.

The Opportunity AI Creates

For many manufacturers, AI is seen as another technology trend. In reality, it's something much more practical.

AI gives manufacturers the opportunity to improve the two factories they've largely ignored. It can:

- Answer operational questions instantly.
- Capture organizational knowledge.
- Draft routine documents.
- Summarize information.
- Identify operational risks.
- Recommend next steps.
- Automate repetitive processes.

The aim isn't to replace experienced people. It's to make their expertise available to everyone.

Imagine if every employee could benefit from the knowledge of your most experienced estimator, planner, buyer or production manager. That's the opportunity AI creates.

Why Job Shops Benefit More Than Most

Large manufacturers often have dedicated departments for planning, engineering, procurement and continuous improvement. Job shops rarely have that luxury.

The same people wear multiple hats. An estimator might also manage customer relationships. A production manager may be responsible for planning, purchasing and scheduling.

Every interruption matters. Every hour spent on administration is an hour not spent improving the business.

That's why AI often delivers proportionally greater value in job shops than in larger organizations. It doesn't replace specialists. It gives small teams the capability of much larger ones.

AI Isn't Replacing Experience

One of the biggest misconceptions about AI is that it replaces expertise. Manufacturing doesn't work like that.

Experience matters. Judgment matters. Relationships matter. AI cannot replace those things.

What it can do is remove the repetitive work surrounding them. Instead of spending twenty minutes finding information, your team spends twenty minutes solving problems. Instead of building reports, they discuss improvements. Instead of searching for answers, they make decisions.

That’s where productivity comes from.

Looking Beyond the Machines

For years, manufacturers have invested heavily in improving the production factory. The next competitive advantage won’t come from another machine. It will come from improving how information flows, how knowledge is shared and how decisions are made.

The businesses that recognize this shift early won’t simply become more efficient. They’ll become more agile, more resilient and better prepared for whatever comes next.

KEY TAKEAWAY

Every job shop has three factories: one that produces parts, one that processes information and one that stores knowledge. AI’s greatest opportunity isn’t replacing the first. It’s improving the other two.

CHAPTER 02

Where AI Creates Value Across the Job Shop

Follow a single order from quote to delivery and the wins add up, stage by stage.

Artificial intelligence is often presented as a technology that will change manufacturing overnight. The reality is much more practical.

The greatest value comes from saving small amounts of time, reducing repetitive work and helping people make better decisions throughout the day.

One task saved here. Five minutes saved there. A question answered instantly instead of twenty minutes spent searching. A problem identified before it delays production.

Individually these improvements may seem modest. Collectively they change the way a business operates.

Let’s follow a typical customer order and see where AI can make a difference.

Stage 1 · Winning the Work

Everything starts with the quotation. For many job shops, estimating remains one of the most knowledge-intensive activities in the business.

Estimators search through previous jobs, compare pricing, review drawings, calculate routing times and answer customer questions, often under significant time pressure.

AI doesn’t replace the estimator. It helps them get to the right answer faster.

AI IN ACTION

Instead of searching folders and spreadsheets, ask:

“Have we made anything similar before?”

AI instantly retrieves comparable jobs, previous quotations, drawings, bills of materials and production history. The estimator starts with knowledge instead of a blank page.

BUSINESS VALUE

- ✓ Faster quotations.
- ✓ More consistent pricing.
- ✓ Better use of historical knowledge.
- ✓ More quotes completed each week.

Stage 2 · Preparing Production

Once an order is won, engineering and production planning begin. This is where information often becomes fragmented: drawings, revisions, bills of material, routings, work instructions, emails.

AI helps teams locate and interpret information without searching multiple systems.

AI IN ACTION

Ask:

"Show me every engineering change made to this part."

or

"Find similar assemblies we've produced before."

AI retrieves the information in seconds.

BUSINESS VALUE

- ✓ Less searching.
- ✓ Better consistency.
- ✓ Reduced engineering effort.
- ✓ Faster job release.

Stage 3 · Planning and Scheduling

Every job shop deals with change: urgent customer requests, late materials, machine breakdowns, staff absences.

Scheduling isn't a one-time activity. It's continuous. AI helps planners identify issues before they become problems.

AI IN ACTION

Every morning, your production manager receives a summary:

- Jobs at risk.
- Material shortages.
- Capacity constraints.
- Late operations.
- Recommended priorities.

Instead of spending the first hour gathering information, they begin solving problems immediately.

BUSINESS VALUE

- ✓ Earlier intervention.
- ✓ Better on-time delivery.
- ✓ Reduced firefighting.
- ✓ Improved production meetings.

Stage 4 · Purchasing and Supply Chain

Buyers spend significant time checking supplier updates, monitoring shortages and responding to production changes. Much of this work follows predictable patterns.

AI helps identify exceptions rather than requiring buyers to review everything manually.

AI IN ACTION

Ask:

"Which supplier deliveries could delay production this week?"

or

"Create purchase orders for all material shortages."

AI identifies the issues and prepares the work. The buyer reviews and approves.

BUSINESS VALUE

- ✓ Faster purchasing.
- ✓ Better supplier visibility.
- ✓ Fewer shortages.
- ✓ More proactive planning.

Stage 5 · Keeping Customers Informed

Customers increasingly expect immediate answers. Where is my order? Has production started? When will it ship?

Traditionally, someone has to investigate before responding. AI can retrieve live operational information instantly.

AI IN ACTION

A customer calls asking about an urgent order. Instead of contacting production, the customer service team asks:

"Give me the latest production status for Job 48217."

Within seconds, AI provides:

- Current operation.
- Completion percentage.
- Expected completion date.
- Any identified risks.

The customer receives an accurate answer immediately.

BUSINESS VALUE

- ✓ Faster responses.
- ✓ Better customer experience.
- ✓ Less interruption for production staff.

Stage 6 · Helping Leadership Make Better Decisions

Managers shouldn't spend Monday morning building reports. They should spend Monday morning improving the business.

AI changes the conversation from finding information to understanding it.

AI IN ACTION

Instead of opening multiple reports, ask:

"Why did on-time delivery fall last month?"

AI summarizes:

- Production bottlenecks.
- Supplier delays.
- Labor constraints.
- Capacity utilization.
- Recommended actions.

Leadership teams spend less time preparing for meetings and more time discussing improvements.

BUSINESS VALUE

- ✓ Better visibility.
- ✓ Faster decision-making.
- ✓ More productive management meetings.

AI Works Best When It’s Part of Everyday Work

The examples in this chapter have one thing in common. None of them require employees to become AI specialists.

People continue doing the jobs they already know. AI simply removes the repetitive work that surrounds them.

The result is more time for:

- Solving customer problems.
- Improving production.
- Supporting colleagues.
- Developing new business.
- Driving continuous improvement.

That’s where AI delivers its greatest value. It helps every member of the team perform at their best.

KEY TAKEAWAY

The most successful job shops won’t use AI to automate everything. They’ll use it to remove repetitive work, make knowledge instantly accessible and give their people more time to focus on the activities that create the greatest value.

CHAPTER 03

The Five Characteristics of an AI-Powered Job Shop

The manufacturers getting the most from AI aren't spending the most. They're building five foundations first.

Technology alone doesn't make a job shop more competitive. The most successful manufacturers combine skilled people, efficient processes and the right technology to create an operation that continually improves.

Artificial intelligence doesn't change that. It accelerates it.

As we've worked with manufacturers exploring AI, one thing has become clear. The businesses seeing the greatest value aren't necessarily those investing the most in technology. They're the ones building the right operational foundations.

Every AI-powered job shop shares five common characteristics.

Characteristic 1 · Connected Information

Every job shop generates thousands of pieces of information every week: quotes, drawings, bills of materials, work orders, purchase orders, production updates, quality records, customer communications.

The problem isn't collecting data. The problem is connecting it.

Too often, employees spend valuable time searching across emails, spreadsheets, shared folders and multiple systems to answer what should be simple questions. When information is fragmented, decisions become slower and mistakes become more likely.

An AI-powered job shop connects operational information so it becomes accessible through a single source of truth. Instead of searching, employees ask. Instead of hunting for information, they spend time acting on it.

AI IN ACTION

"Show me everything related to Job 48217."

Within seconds, AI retrieves:

- Customer details
- Drawings
- Revision history
- Production status
- Purchase orders
- Delivery commitments

No searching. No switching between systems. Just answers.

Characteristic 2 · Knowledge That Stays with the Business

Every manufacturer has experts. The estimator who's priced thousands of jobs. The production manager who instinctively spots bottlenecks. The buyer who knows which suppliers always deliver. The machinist who remembers how a difficult component was produced five years ago.

Their knowledge is one of the company's greatest assets. Unfortunately, much of it exists only in conversations, notebooks or memory. When experienced people retire or leave, years of operational knowledge often disappear with them.

AI changes that. By capturing procedures, decisions, documents and historical information, organizations can make knowledge available to everyone, not just a handful of experienced individuals. Knowledge becomes a shared business asset instead of a personal one.

AI IN ACTION

A new planner asks:

"Have we manufactured anything similar before?"

Rather than interrupting a colleague, AI instantly retrieves comparable jobs, production notes and lessons learned. Experience becomes available to the whole business.

Characteristic 3 · Intelligent Automation

Most manufacturers don't need more software. They need less repetitive work.

Every day, employees complete hundreds of routine tasks: creating purchase orders, sending approval requests, updating customers, producing reports, following up suppliers, preparing production meetings.

These activities are necessary, but they rarely require human creativity. AI-powered automation removes repetitive administration while leaving people in control of important decisions. Employees review. AI prepares. The result is faster processes with fewer manual steps.

AI IN ACTION

A large quotation is approved. Instead of manually notifying multiple departments, AI automatically:

- Creates the workflow.
- Sends approval requests.
- Updates the project.
- Notifies purchasing.
- Alerts production planning.

No one has to remember the process. The system does it automatically.

Characteristic 4 · Real-Time Operational Visibility

Many job shops only discover problems after they happen: late deliveries, material shortages, capacity issues, production delays, customer complaints. By then, the only option is recovery.

An AI-powered business identifies risks earlier. Instead of waiting for someone to analyze reports, AI continuously monitors operational activity and highlights exceptions that need attention. Managers spend less time looking for problems and more time solving them.

AI IN ACTION

Before the morning production meeting, AI prepares a summary of:

- Jobs at risk of delay.
- Material shortages.
- Capacity constraints.
- Supplier issues.
- Customer orders requiring attention.

Every meeting starts with the same, up-to-date picture of the business.

Characteristic 5 · A Platform That Evolves

Manufacturing doesn't stand still. Customers change. Products change. Processes improve. Technology evolves. Your ERP should evolve with them.

Traditional ERP systems often become more difficult to change over time. Every new requirement becomes another project. Every process improvement requires specialist development. Every customization increases complexity.

An AI-powered job shop takes a different approach. Business users can configure workflows, automate processes and introduce improvements without waiting months for development work. Continuous improvement becomes part of everyday operations. The system evolves as the business evolves.

AI IN ACTION

A production manager says:

> ***"Whenever a job is running more than two days late, notify the account manager and schedule a review meeting."***

Instead of raising an IT request, the workflow is created in minutes. The business improves itself.

Bringing the Five Characteristics Together

These characteristics aren't separate initiatives. They reinforce one another.

Connected information gives AI access to trusted operational data. Captured knowledge allows every employee to benefit from years of experience. Automation removes repetitive

administration. Real-time visibility helps teams respond faster. A flexible platform ensures improvements continue long after implementation.

Together, they create something more valuable than an ERP system. They create an organization that learns, adapts and improves every day.

AI Is an Enabler, Not the Destination

It’s easy to become distracted by technology. But AI isn’t the goal. The goal is building a business that is more responsive, more productive and more resilient. Artificial intelligence is simply another tool that helps manufacturers achieve that outcome.

The businesses that succeed won’t necessarily have the most advanced AI. They’ll be the ones that combine skilled people, strong processes and trusted operational data to create a culture of continuous improvement. That’s what an AI-powered job shop really looks like.

KEY TAKEAWAY

Becoming an AI-powered job shop isn’t about adding another technology layer. It’s about connecting information, capturing knowledge, automating routine work, improving visibility and creating a business that can continuously adapt. AI simply accelerates what the best manufacturers have always done: find better ways of working.

CHAPTER 04

Five Myths Holding Job Shops Back

Too small, too messy, too disruptive: the beliefs that keep manufacturers on the sidelines, and why they don't hold up.

Artificial intelligence is generating more discussion in manufacturing than almost any other technology. Unfortunately, it's also generating plenty of misconceptions.

Many manufacturers assume AI is only relevant for large enterprises, requires years of clean data or demands significant investment before any value can be realized. The reality is far more practical.

Let's look at five of the most common myths that prevent job shops from taking the first step.

Myth 1 · "We're Too Small for AI"

Many job shops assume AI is something designed for global manufacturers with dedicated IT teams and large technology budgets. In reality, smaller manufacturers often have the most to gain.

Why? Because every employee wears multiple hats. The estimator also manages customers. The production manager also schedules work. The buyer also expedites suppliers.

Every hour spent on administration is an hour not spent creating value. AI helps small teams achieve more without increasing headcount. It doesn't replace people. It gives them more time to focus on the work that really matters.

REALITY **The smaller the team, the greater the impact AI can have on productivity.**

Myth 2 · "Our Data Isn't Good Enough"

It's true that AI performs best when it has access to reliable information. But many manufacturers underestimate the amount of valuable operational data they already possess.

Years of quotations, production history, customer orders, purchase orders, bills of materials, supplier records, drawings, job costs and engineering changes. This information already tells the story of how your business operates.

The objective isn't to create perfect data before using AI. It's to make better use of the data you already have while continuously improving its quality.

REALITY **Most manufacturers already have enough operational knowledge to begin using AI effectively.**

Myth 3 · “AI Will Replace Our People”

Perhaps the biggest misconception of all. Manufacturing has always depended on experience, judgment, problem solving, relationships and creativity. No AI system can replace those qualities.

What AI can replace is repetitive administration: searching, summarizing, preparing documents, finding information, creating reports. That means experienced employees spend more time applying their expertise instead of searching for it.

REALITY **AI amplifies skilled people. It doesn’t replace them.**

Myth 4 · “Implementation Will Be Too Disruptive”

Many manufacturers remember ERP projects that took months, disrupted operations and demanded significant internal resources. They naturally assume introducing AI will require another major overhaul. It doesn’t.

The most successful organizations start small. They identify one repetitive process, one reporting challenge, one knowledge problem, one workflow. Then they improve it. The lessons learned become the foundation for the next improvement. AI works best when introduced incrementally.

REALITY **The biggest AI success stories usually begin with one practical improvement, not one massive project.**

Myth 5 · “We Need an AI Strategy Before We Start”

It’s easy to believe every technology initiative needs a detailed strategy before any action can be taken. In reality, waiting for the perfect plan often delays progress.

The manufacturers seeing the greatest benefit from AI are learning by doing. They identify small opportunities, measure results, build confidence, then expand into new areas. Their strategy evolves alongside their experience.

REALITY **You don’t need all the answers before you begin. You simply need a willingness to improve one process at a time.**

The Biggest Myth of All

Perhaps the most damaging misconception is that AI is a technology project. It isn’t. It’s an operational improvement initiative.

The objective isn’t to implement artificial intelligence. The objective is to make your business easier to run.

When viewed through that lens, the questions become much simpler. Instead of asking “How do we implement AI?”, ask:

- Where do we waste the most time?
- What knowledge is difficult to access?
- Which processes frustrate our people?
- What repetitive work could be automated?
- Where do delays occur because information isn’t available?

Answer those questions and you’ll discover where AI can create immediate value.

Start with Problems, Not Technology

The most successful manufacturers don’t begin with AI tools. They begin with operational challenges: reduce quoting time, improve production visibility, capture engineering knowledge, respond to customers faster, automate routine administration.

AI becomes one of several tools that helps achieve those outcomes. Technology follows the business, not the other way around.

KEY TAKEAWAY

AI isn’t reserved for large manufacturers, perfect data or major change programs. The organizations seeing the greatest success are those that focus on solving practical business problems, introduce AI gradually and use it to help skilled people perform at their best.

CHAPTER 05

A Day with Milo

One ordinary Tuesday, seen through the lens of AI that already knows the whole shop.

Imagine arriving at work on a typical Tuesday morning. The machines are running. Orders are due this week. Materials are arriving. Customers are already emailing. The production meeting starts in thirty minutes. Nothing unusual.

Now imagine you have an experienced colleague sitting beside you. Someone who knows every customer, every job, every drawing, every purchase order, every supplier, every production schedule and every report. Someone who can answer almost any question in seconds.

That's what working with AI should feel like. Let's see what that looks like in practice.

This chapter is illustrative. It shows the kind of help AI can give across a working day, not a list of specific product features.

7:30 AM · Starting the Day

You grab a coffee and open your laptop. Instead of opening half a dozen reports, you simply ask:

> ***"Good morning, Milo. What needs my attention today?"***

Within seconds, Milo responds.

▸ **Today's priorities**

- Three jobs are at risk of missing delivery this week.
- One supplier shipment is now two days late.
- A customer has requested an urgent delivery change.
- Two purchase orders require approval.
- Gross margin on Job 28417 has fallen below target.
- Five customer quotations are awaiting review.

Instead of spending the first hour collecting information, you already know where to focus.

AI IN ACTION

The first hour goes on fixing problems, not finding them.

8:00 AM · The Production Meeting

The team gathers around. Normally someone spends twenty minutes working through spreadsheets and printed reports. Today you ask:

> ***"Summarize production performance since yesterday."***

Milo replies:

- Two jobs completed ahead of schedule.
- One machine experienced an unplanned stoppage.
- Four operations are running behind plan.
- Material shortages may affect two jobs tomorrow.
- Overtime isn't currently required.

The discussion immediately turns to solutions rather than status updates. Everyone leaves with clear priorities.

AI IN ACTION

Production meetings become decision-making sessions, not reporting sessions.

9:15 AM · A Customer Calls

A customer wants an update on a critical order. Instead of putting them on hold while you investigate, you ask:

> ***"Where is Job 28417?"***

Milo responds:

- Current operation: CNC Milling
- Progress: 80% complete
- Expected completion: Thursday 2:00 PM
- Delivery: On schedule
- Potential risk: Awaiting inspection before dispatch.

You answer the customer immediately. No chasing production. No phone calls. No guessing.

AI IN ACTION

Customer inquiries become opportunities to build confidence instead of interruptions.

10:30 AM · Engineering Needs Help

An engineer receives a drawing for a complex component. It looks familiar. Rather than asking around the office:

> ***"Have we manufactured anything similar before?"***

Milo searches years of production history. Within seconds it finds:

- Three similar jobs.
- Original drawings.
- Manufacturing notes.
- Tooling information.

- Previous production issues.
- Final job costs.

Knowledge that once depended on experienced employees is now available to everyone.

AI IN ACTION

Years of experience become searchable.

12:00 PM · Purchasing

Before lunch, purchasing reviews material availability. Instead of opening multiple supplier reports, they ask:

> ***"Which material shortages could delay production next week?"***

Milo identifies:

- Four critical shortages.
- Two suppliers with delayed deliveries.
- One alternative supplier.
- Recommended purchase orders.

Rather than searching for problems, the buyer starts solving them immediately.

AI IN ACTION

Buyers spend less time monitoring and more time managing suppliers.

1:30 PM · Preparing a Quotation

Sales receives an inquiry for a repeat customer. The estimator asks:

> ***"Find similar work we've completed in the last three years."***

Milo retrieves:

- Previous quotations.
- Selling prices.
- Actual production costs.
- Drawings.
- Delivery performance.
- Gross margins.

Instead of starting from scratch, the estimator starts with experience. The quotation is completed faster and with greater confidence.

AI IN ACTION

Better estimates. Less searching. More consistency.

3:00 PM · Understanding Performance

The owner has a question:

> ***"Why has our gross margin reduced this month?"***

Instead of building reports, Milo analyzes operational data and explains:

- Increased subcontract costs.
- Material price increases.
- Lower utilization in Cell Three.
- Additional rework on two large projects.
- Delayed customer approvals extending lead times.

More importantly, Milo recommends areas worth investigating further. Management meetings become conversations about improvement, not data collection.

AI IN ACTION

Leaders spend more time making decisions and less time producing reports.

4:30 PM · Continuous Improvement

Before leaving, you have one final idea. Whenever a job is more than two days behind schedule, you'd like someone notified automatically. Rather than raising an IT request, you simply ask:

> ***"Create a workflow that alerts Production, Customer Service and Sales whenever a job is running more than two days late."***

Milo creates the workflow. You review it. Approve it. Done. The business has improved before you've even left for the day.

AI IN ACTION

Continuous improvement becomes part of everyday work, not a future project.

The Difference Isn't the Technology

Looking back over the day, something becomes obvious. None of these activities required advanced technical knowledge. No one wrote code. No one built reports. No one searched through multiple systems.

People simply asked questions, reviewed recommendations, made decisions and got on with their work. That’s where AI creates value. It removes what slows people down.

Meet Your New Team Member

The best way to think about AI isn’t as another piece of software. Think of it as a colleague on the team: one that never forgets, never loses information, never gets tired, never spends twenty minutes searching for a document, and is always ready to help.

When AI becomes part of everyday work, skilled people spend less time managing information and more time applying their experience. That’s when technology starts making a real difference.

KEY TAKEAWAY

AI shouldn’t feel like another application employees need to learn. It should feel like having an experienced colleague available whenever they need information, insight or support. The greatest value isn’t artificial intelligence itself. It’s giving every member of the team more time to do the work that matters.

CHAPTER 06

Your First 90 Days: A Practical Roadmap

A ninety-day path from spotting the friction to making continuous improvement a habit.

By this point, you've seen where AI can create value across a job shop. You've seen how it helps estimators quote faster, production managers identify risks earlier, buyers become more proactive and leadership teams make better decisions.

The next question is obvious: "Where do we start?"

Many organizations assume adopting AI requires a major change program. In reality, the opposite is true. The manufacturers seeing the greatest success are taking small, deliberate steps that deliver immediate value while building confidence across the business.

Think of AI as a continuous improvement initiative rather than a technology project. The goal isn't to implement AI everywhere. The goal is to make work easier, faster and more consistent.

Here's what that journey typically looks like.

Days 1–30: Find the Friction

Don't begin by asking, "Where can we use AI?" Instead ask:

- Where do people spend time searching for information?
- Which tasks are repeated every day?
- Where do delays occur because information isn't available?
- Which reports take hours to prepare?
- What knowledge exists in only one or two people's heads?

These are your biggest opportunities. At this stage, you're not changing processes. You're identifying where your team experiences the most friction.

▸ Your objectives

- Understand where time is being lost.
- Identify repetitive administrative work.
- Highlight knowledge that needs to be captured.
- Prioritize quick wins.

SUCCESS LOOKS LIKE **A clear list of opportunities ranked by business impact rather than technical complexity.**

Days 31–60: Deliver Quick Wins

With your priorities identified, begin introducing AI into day-to-day work. Focus on simple, high-value activities that employees will immediately appreciate. Examples include:

- Daily production summaries.

- Customer order lookups.
- Engineering document searches.
- Supplier performance summaries.
- Quotation history.
- Meeting preparation.
- Workflow notifications.

These improvements don't change how people work. They simply remove unnecessary effort. Quick wins build confidence. Confidence encourages adoption. Adoption creates momentum.

▸ **Your objectives**

- Introduce AI into everyday tasks.
- Reduce repetitive administration.
- Demonstrate measurable time savings.
- Encourage employee feedback.

SUCCESS LOOKS LIKE **Employees begin asking, "Can AI help with this too?"**

Days 61–90: Build Continuous Improvement

Once teams become comfortable using AI, the conversation naturally changes. Instead of asking what AI can do, people begin identifying opportunities themselves.

Production suggests new workflows. Engineering captures more knowledge. Sales automates routine administration. Leadership asks more operational questions. AI becomes part of everyday improvement. This is where the real change begins.

▸ **Your objectives**

- Expand successful use cases.
- Capture organizational knowledge.
- Automate routine workflows.
- Measure business outcomes.

SUCCESS LOOKS LIKE **AI becomes another tool employees use every day, not a special project.**

Measuring Success

The best AI initiatives aren't measured by how many features are implemented. They're measured by business outcomes. Ask questions such as:

- How much faster are we producing quotations?
- How many hours of administration have we removed?
- Are customer inquiries resolved more quickly?
- Have production meetings become shorter and more effective?
- Are managers making decisions using real-time information?

- Are employees spending more time solving problems and less time searching for information?

These are the measures that matter.

Common Mistakes to Avoid

▸ Trying to automate everything

Start with one problem. Learn. Expand.

▸ Focusing on technology instead of people

AI should support your team, not replace it. Involve employees early and encourage them to identify opportunities for improvement.

▸ Waiting for perfect data

Perfect data doesn't exist. Start with the operational information you already have and improve it over time.

▸ Treating AI as an IT project

The most successful AI initiatives are owned by the business: operations, engineering, production, customer service, purchasing. Technology enables the change. People drive it.

The Goal Isn't Artificial Intelligence

It's easy to become distracted by the technology. But the real objective is much simpler. You want a business where:

- Information is available instantly.
- Knowledge is shared.
- Routine work is automated.
- Managers spend less time reporting and more time improving.
- Employees focus on customers instead of administration.

AI simply helps you get there faster.

Progress Over Perfection

The manufacturers that will gain the greatest advantage from AI aren't waiting for the perfect strategy. They're taking practical steps today. One workflow. One process. One improvement at a time.

Small improvements accumulate. Teams become more confident. Knowledge grows. Processes improve. Eventually, the organization reaches a point where continuous improvement becomes part of its culture. That's what an AI-powered job shop really looks like.

KEY TAKEAWAY

Becoming an AI-powered job shop isn't about implementing one big project. It's about solving one business problem at a time. Start small, demonstrate value, build confidence and let continuous improvement guide the journey.

CHAPTER 07

Your AI Journey Starts Here

Four practical next steps, from a readiness check to seeing an AI-native ERP on your own workflow.

Artificial intelligence isn't a destination. It's another step in the evolution of manufacturing.

The most successful job shops won't adopt AI because it's fashionable. They'll adopt it because it helps their people work more effectively, make better decisions and continually improve the way the business operates.

The good news is you don't need to change everything overnight. Every successful AI journey starts with a single question: "Where could we make work easier for our people?"

Answer that question honestly and you'll already be ahead of many manufacturers. The next step is simply deciding where to begin.

Step 1 · Understand Your Starting Point

Every business is different. Some manufacturers already have well-connected systems, documented processes and reliable operational data. Others are still heavily dependent on spreadsheets, manual processes and individual knowledge.

Before deciding where to invest, it's worth understanding your current level of AI readiness. Our AI Readiness Assessment helps you evaluate your business across four key areas:

- Process Agility
- Operational Visibility
- Automation & Integration
- AI Readiness

Rather than producing a simple score, the assessment compares where your business is today with where you want it to be over the next two to three years. The result is a clear picture of the opportunities that will have the greatest impact.

Step 2 · Identify Practical Opportunities

AI creates value when it solves real operational problems. That's why we've developed 25 Practical AI Use Cases for Job Shops.

Rather than focusing on technology, it explores everyday situations where AI can help. From faster quoting and production scheduling to purchasing, customer service and management reporting, you'll discover practical ideas that can be implemented incrementally. Many manufacturers identify several opportunities within minutes of reading it.

Step 3 · Build Your Roadmap

Every job shop has different priorities. Some want to improve quoting. Others need better production visibility. Some want to capture knowledge before experienced employees retire. Others are looking to automate repetitive administration.

Our AI Opportunity Workshop helps identify where AI can deliver the greatest operational value for your business. Together we'll:

- Review your current processes.
- Identify areas where time is being lost.
- Prioritize practical AI opportunities.
- Explore quick wins and longer-term improvements.
- Build a roadmap based on business value, not technology.

The outcome isn't a software proposal. It's a practical improvement plan you can use immediately.

Step 4 · Experience an AI-Native ERP

Most ERP demonstrations focus on screens and features. We prefer to demonstrate outcomes. During a personalized session you'll see how Milo, Tangle's built-in AI engineer, helps manufacturers:

- Find information instantly.
- Capture organizational knowledge.
- Automate repetitive workflows.
- Monitor operational performance.
- Improve decision-making across the business.

More importantly, you'll see how these capabilities fit naturally into the working day of a modern job shop. The question isn't whether AI can answer questions. It's how much time your team could save if those answers were always available.

A Final Thought

Throughout this playbook we've explored three hidden factories that exist inside every job shop: the factory that produces parts, the factory that processes information and the factory that stores knowledge.

Manufacturers have spent decades improving the first. The greatest opportunity over the next decade lies in improving the other two.

Businesses that connect information, capture experience and equip their people with AI won't simply become more efficient. They'll become more resilient, more responsive, more attractive places to work, and better equipped to compete in an increasingly demanding market.

That's what becoming an AI-powered job shop really means. It doesn't replace people. It helps every person perform at their very best.

About Tangle

Tangle is an AI-native ERP platform built for manufacturers that need more than traditional ERP. Combining modern cloud technology, built-in AI, low-code / no-code configuration and powerful workflow automation, Tangle helps job shops continuously improve the way they operate.

Whether you’re replacing a legacy ERP system or exploring how AI can improve everyday operations, our goal is simple: to help manufacturers spend less time managing information and more time delivering value to their customers.

Because your ERP should help improve the business, every single day, and not only record it.

Continue Your AI Journey

- ✓ **Complete the AI Readiness Assessment**
- ✓ **Explore the 25 Practical AI Use Cases for Job Shops**
- ✓ **Join an AI Opportunity Workshop**
- ✓ **Experience Milo in a personalized demonstration**

More free tools: ERP Maturity Assessment · Five Levers ROI Model · all guides

Manufacturing won't be rebuilt by artificial intelligence alone. It will be rebuilt by skilled people, supported by better tools, better information and a steady commitment to continuous improvement.

Start building your AI-powered job shop.

Book a demo at **tangle.io/demo**