

7 Ways AI Gives Manufacturers an Edge

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Every day, hundreds of decisions are made across your manufacturing business. Buyers decide what to order. Schedulers move jobs. Customer service answers delivery questions. Production supervisors respond to machine issues. Accounting reviews costs. Leadership looks for signs that something is headed in the wrong direction before it becomes an expensive problem.

None of those decisions happen in isolation. They're connected by the data inside your ERP system.

For years, ERP has done an excellent job collecting and organizing information. The next evolution is making that information easier to access, understand and act on.

This is where artificial intelligence changes the conversation.

The greatest value of AI isn't that it replaces people or makes decisions on their behalf. It helps people work through routine tasks faster, uncover information that would otherwise take time to find and spend more of their day solving problems instead of searching for answers.

When AI is integrated directly into your ERP system, it becomes another way to remove friction from everyday manufacturing.

Here are seven ways manufacturers are using AI to gain an operational edge.

1 Stop Hunting for Information

Every manufacturer has experienced it. Someone asks a simple question, and five minutes later three people are still trying to find the answer. Has the material arrived? What's the latest revision? When did we last build this part? Did the customer approve the change? Where's the inspection report?

The problem usually isn't that the information doesn't exist. It's buried across work orders, purchase orders, inventory records, quality documentation, emails, spreadsheets and employee knowledge.

Searching has quietly become one of manufacturing's biggest productivity killers.

AI changes that by making ERP data easier to access.

Instead of navigating multiple screens or remembering where information lives, you can ask questions in plain language and receive answers pulled directly from the ERP system. Engineers spend less time tracking down drawings. Buyers quickly locate purchasing history. Customer service finds shipment details without bouncing between departments. Supervisors spend less time answering routine questions and more time managing production.

The impact extends beyond saving a few minutes here and there. Faster access to information keeps work moving. Decisions happen sooner. Interruptions become less frequent. New employees become productive more quickly because they don't have to memorize where everything is stored.

Knowledge becomes part of the business instead of living inside a handful of experienced employees.

The advantage: The less time your employees spend searching for information, the more time they spend creating value.

Where you'll notice it first

- Customer Service
- Purchasing
- Engineering
- Production
- Quality



2 Trust Your Data Again

AI is only as useful as the information behind it.

That's good news for manufacturers who have invested years into building a reliable ERP system.

Unfortunately, even well-managed businesses deal with inconsistent data. Customer names are entered differently. Part descriptions vary. Information gets skipped. Reporting requires manual clean up before you can trust it. Duplicate records appear. Small errors eventually become larger operational problems.

One inaccurate inventory count can delay production.

One incorrect job cost can affect future pricing.

One missing purchase order update can create unnecessary phone calls and expedite fees.

AI helps identify those issues before they spread.

Rather than replacing employees, AI acts as another layer of review. It recognizes unusual transactions, identifies inconsistencies, suggests corrections and highlights missing information that deserves another look. Instead of discovering data problems weeks later through reports or customer complaints, manufacturers have another opportunity to catch them while they're still small.

The payoff isn't simply cleaner records.

It's improved forecasting, scheduling, purchasing, costing, customer service and executive decision making. When everyone trusts the information coming from the ERP system, they spend less time verifying it and more time acting on it.

The advantage: Better decisions start with better data. AI helps protect the accuracy your business depends on.

Where you'll notice it first

- Inventory Management
- Job Costing
- Purchasing
- Accounting
- Executive Reporting

3 Give Good Employees More Time

Ask almost any manufacturer about their biggest challenge and labor will quickly enter the conversation.

Experienced employees retire, and finding skilled replacements takes longer. Meanwhile, customer expectations continue to rise.

Here is where you can find immediate value and help good employees accomplish more during the workday.

Much of an employee's day isn't spent performing skilled work. It's spent searching for information, summarizing meetings, locating documents, reviewing reports, double-entering data, cleaning up errors, answering repetitive questions or preparing routine communications.

Those tasks matter, but they rarely require years of manufacturing experience.

AI helps reduce the administrative work surrounding the job so employees can spend more time doing the work only they can do.

Schedulers spend more time optimizing production instead of compiling reports. Purchasing teams spend more time negotiating with suppliers instead of searching through order histories. Customer service reps spend more time helping customers instead of tracking down shipment updates. Supervisors spend more time coaching employees instead of gathering information for meetings.

None of this replaces experience. It allows experience to be used where it creates the most value.

As manufacturers continue to face labor shortages, helping employees become more productive may be just as important as hiring additional people.

The advantage: AI doesn't replace experienced employees. It helps them spend more time using their expertise where it matters most.

Where you'll notice it first

- Production Supervisors
- Purchasing Teams
- Schedulers
- Customer Service
- Leadership

4 Decide with Confidence

The average manufacturer makes hundreds of operational decisions every day. Some are small. Others determine whether jobs ship on time, margins stay healthy or customers come back.

And none of these decisions should rely on guesswork.

For years, ERP systems have given manufacturers access to the information needed to answer those questions. AI takes the next step by helping users analyze that information faster.

Instead of manually sorting through reports, comparing spreadsheets or building filters, AI can summarize production data, identify trends, surface exceptions and point users toward information that deserves attention. Managers are now empowered to make decisions – not waste time gathering info.

This is especially valuable when the business is moving and growing quickly. The faster decision makers understand what's happening, the faster they can respond.

Good manufacturers don't react faster because they work harder. They react faster because they see problems sooner.

The advantage: Better information doesn't replace experience. It helps experienced people make better decisions.

Where you'll notice it first

- Production Scheduling
- Capacity Planning
- Job Costing
- Purchasing
- Executive Dashboards
- Sales Forecasting

5 Catch Problems Earlier

Most expensive manufacturing problems don't appear overnight. The warning signs are usually there. They're just difficult to spot among thousands of daily transactions.

AI shows you patterns that deserve attention before they become expensive problems.

For example, recurring quality issues may begin appearing across similar jobs. Certain machines may require more maintenance than expected. Vendors may consistently deliver late. Labor performance may begin trending downward within a specific workcenter.

None of these situations automatically require action.

They require awareness.

By helping manufacturers identify unusual patterns earlier, AI gives leadership more opportunities to solve problems while they are still manageable. That means fewer surprises, less firefighting, and more time spent improving operations instead of recovering from disruptions.

The goal is to reduce the number of problems that catch you by surprise.

The advantage: The easiest problem to solve is the one you catch before it grows.

Where you'll notice it first

- Preventative Maintenance
- Quality Management
- Vendor Performance
- Production Efficiency
- Inventory Control
- Continuous Improvement

6 Answer Customers without Guessing

Customers don't expect perfection.

When they call asking where an order stands, whether additional parts are available, or if production can meet a requested delivery date, they want an answer right then. Not a promise to call them back after someone checks three different systems.

Every delayed response creates uncertainty. Every uncertain answer reduces confidence.

When AI works alongside ERP, customer-facing employees can find information much faster. Shipment status, inventory availability, production progress, previous quotes, customer history and open orders become easier to locate without navigating multiple screens or relying on another department.

That kind of speed matters. Fast answers improve customer service. Accurate answers build trust.

Together, they strengthen long-term customer relationships.

The advantage: Customers remember how quickly you solve problems, not how many systems you searched to find the answer.

Where you'll notice it first

- Customer Service
- Sales
- Shipping
- Production Control
- Order Management
- Account Management

7 Build a Business That's Ready for What's Next

Manufacturing doesn't stand still.

Customer expectations change. Supply chains shift. New regulations emerge. Technology continues to evolve. The manufacturers that thrive aren't the ones who predict every change. They're the ones who can adapt quickly when change arrives.

Today's AI capabilities are already helping manufacturers answer questions faster, reduce repetitive work and uncover insights hidden within their ERP data.

Think about how manufacturing has changed over the last twenty years. Paper travelers have largely given way to digital work orders. Manual inventory counts have become barcode scans. Whiteboards have been replaced with real-time dashboards. ERP has transformed the way manufacturers manage their operations.

AI represents the next step in that progression.

It isn't replacing the fundamentals that make manufacturers successful. It strengthens them.

Companies that embrace AI thoughtfully will spend less time performing routine work and more time improving quality, serving customers, developing employees and finding new opportunities to grow. That's where long-term competitive advantage comes from: great people supported by better tools.

The advantage: The manufacturers that gain the most from AI won't be the first to adopt it. They'll be the ones most prepared to use it.

Where you'll notice it first

- Company-Wide Productivity
- Continuous Improvement Initiatives
- Knowledge Sharing
- Employee Onboarding
- Long-Term Technology Adoption
- Business Scalability

For decades, ERP has helped manufacturers bring every part of the business together, from estimating and scheduling to inventory, accounting, purchasing and customer service. AI builds on that foundation by helping people interact with their ERP in faster and more meaningful ways.

The real value of AI is in removing the friction that slows manufacturers down every day.



Less time searching for information.
Less time entering repetitive data.
Less time building reports.
Less time answering the same questions.



More time solving problems.
More time serving customers.
More time improving operations.

That's where manufacturers create an advantage their competitors can't easily replicate.

The companies that benefit most from AI will be the ones applying AI to every business challenge, improving one process at a time and giving their employees better ways to do their jobs.

Manufacturing has always been about continuous improvement.

AI is simply another opportunity to continue that tradition.



ABOUT THE AUTHOR

Trent Maynard is the Director of Product & Engineering at Global Shop Solutions and has a bachelor's degree of Engineering Technology: Mechanical and Manufacturing from Texas A&M University. Maynard leads all aspects of the P&E department including people, innovation, strategy and engineering. He is also responsible for customer satisfaction in our product, technical health of the software and more.