



# AI Is Now Positioned to be Truly Transformational to Drive Bottom-line Results for Industrial Operations

By Ron Kyslinger, Industry Expert – “The O.G.” of automation in the words of the New York Times

**How AI, applied appropriately, is transforming Industrial Operations and driving productivity, quality, delivery, maintenance, and process reliability to new levels.**

For many years, manufacturing software followed a familiar pattern. A myriad of software platforms were built to cover specific functions: ERP, CMMS, MES, WMS, YMS, QMS, analytics, etc., and plants were expected to adapt their workflows around those systems. There were even software systems dedicated to specific machines or types of equipment: AGVs, AMRs, CNCs, CMMs, etc. These software tools were powerful, but rarely intuitive, and adoption often depended more on discipline than usefulness. Likewise, their data and insights were often siloed within the confines of the individual software system. Operators learned to live with them, but few would argue they fundamentally changed how work actually got done.

Anyone who has worked closely with me, for even the shortest amount of time, would know that I often say operators, supervisors, team leaders, and even plant managers in Industrial Operations are drowning in the ocean of data generated by these disparate systems, but, at the same time, they are starving for actionable information.

AI is not new by any means. As a matter of fact, it dates back to the 1950s. I personally have been using AI since the early 1990s when I applied it in Ford's Romeo Engine Plant for Cold Test and various other applications. What has changed is the processing and computational power of the AI platforms. Rules, queries, and/or agents would take days to compute, and I could only store about 3 weeks of production information. Now, AI platforms can run similar rules, queries, and/or agents in milliseconds, and we have the capability to store and access lifetimes of data.

A new class of AI Software, known as Agentic AI, is emerging that can act as a thin client sitting on top of all of the legacy software solutions that already exist within the 4 walls of an industrial operations facility. It does not require that the prior systems be replaced and/or force the operations personnel to clean or otherwise modify the legacy data generated by these systems. The AI platform simply listens to the network traffic coming from all of the disparate legacy systems and generates real-time actionable information, notifications, warnings, and/or can even take corrective actions. Instead of forcing plants to change how they work, these systems adapt to real-time operating conditions, leveraging and synthesizing data from a myriad of disparate systems to surface insight with respect to patterns, automating decisions, and reducing the daily friction inside production and maintenance teams.



Similar shifts are occurring in healthcare, logistics, and financial services. But in industrial environments, the stakes are higher. Downtime carries a direct revenue penalty. Safety incidents can shut down operations. Poor maintenance planning quietly erodes profitability. Minor issues occur sporadically, causing micro-bottlenecks, disrupting flow, and resulting in blocked and starved conditions in the manufacturing process, which quietly erode production numbers. The proper application of Agentic AI software solves real plant-floor problems, and the impact shows up quickly in the P&L. Rhino Tool House has developed an Agentic AI software platform, named RhiKnows, that is now available to all of its manufacturing customers, which provides real-time actionable data and drives better performance that can be measured in the P&L.



## Dispelling the Myth About Data

Many companies have trained their IT teams and operations personnel to protect their data. They have been so overzealous in doing this that their own employees can't access the data they need to do their jobs in a timely fashion. I have experienced this first-hand in operations at some of the largest companies in the world (Amazon, Walmart, Ford, Chrysler, etc.) as well as at some of the smallest start-up companies. What if I told you that your operational data isn't as valuable to others as you think it is? While your data is extremely important to you, it is relatively useless to your competitors. Why? Because your operations are different than your competitors' operations. You have different machines, different torque tools, different process flows, different test equipment, different software systems, etc. Stated quite succinctly, your process is unique. It is so different that even if your competitor had your raw operational data from one of your disparate

systems, there is very little they could do with it. This is precisely why Generative AI applications underperform in these industrial operations and fail to drive an appreciable difference in the P&L.

This is not intended to imply that you should not have good cybersecurity protocols in place to protect your HR data, financial data, payroll data, etc. However, the operational data is quite useless unless it can be put into context by connecting it with information in other systems. For instance, the data provided by an individual nut runner is stored in a system responsible for the data for the power tools. However, that data is relatively useless unless it can be related to the actual VIN or sequence number of the product that it was related to, which might be in a different system, like the MES. Likewise, someone would struggle to correlate the specific data from any single build and/or issue unless they can relate it to the process station number, time of day, temperature, make/model type, operator, maintenance/calibration records, and other variables that might cause the data to be different. Stated more succinctly, the data from any single tool/machine is relatively useless to your competitors, and even inactionable to your own employees, unless it can be put into context, which requires accurately synthesizing data from many disparate systems.

Your data is important in the fact that it can be converted into actionable information through Agentic AI rules and agents to improve your operations. While that information is extremely valuable to you, with respect to improving your operations, it is relatively useless to your competitors, again, because they can't blindly apply it to their process flows, equipment, etc. Likewise, without access to all of the data in all of your legacy systems, the data would lack context, and it would be extremely difficult for them to glean much out of it. A good Agentic AI system will learn and retain institutional knowledge about your proprietary system. It is the institutional knowledge that companies should be protecting, as opposed to the raw data.

## Why Legacy Software Fell Short in Industrial Environments

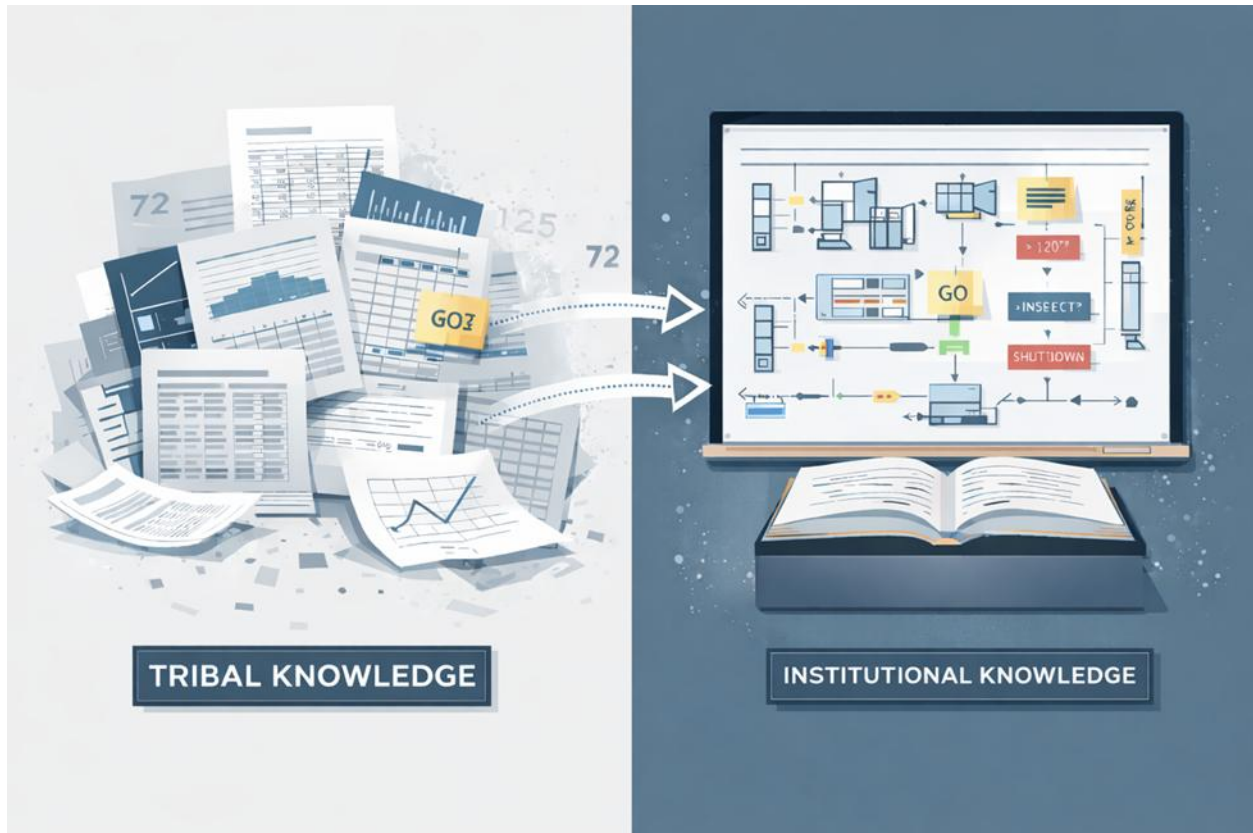
Traditional enterprise software was designed to be one-size-fits-all. That worked reasonably well for finance, HR, and procurement, but manufacturing is not a one-size-fits-all problem. Every plant runs a different mix of products, uses different equipment, different processes, different tolerances, and even has different production priorities. A stamping plant does not operate like an assembly plant. A food processing line does not behave like a heavy machining cell. Reliability risks, failure modes, and service workflows vary widely. ERP systems are transaction engines. CRM systems track relationships. Engineering tools (CAD systems) understand geometry. However, none of them have a data model built for the specific, contextual, multi-parameter technical intelligence that defines a complex industrial order. This is why Generative AI and generic enterprise software struggle in that reality. This is where Agentic AI thrives!



Enterprise software platforms are forced to rely on configuration, customization, and consulting-heavy deployments to comprehend your business. The result is often long implementation cycles, complex user interfaces, and systems that drift out of sync with actual operations as processes evolve. Over time, adoption weakens, data quality erodes, and the platform becomes more of a reporting tool than a decision engine. Also compounding those problems is that the data for each legacy system is retained in only that specific system.

When issues occur, operations personnel are forced to access various systems and sift through volumes of data in the disparate systems, trying to piece together what might have happened. This effectively forces operations personnel to react to what has already happened, thus driving the process through the rearview mirror.

In practice, operators still rely on tribal knowledge, spreadsheets, and informal workflows to keep production running. Critical insight stays locked in people's heads or buried in disconnected systems. When experienced technicians, engineers, and Subject Matter Experts (SMEs) retire or move on, plants lose more than labor/employees. They lose operational memory. But what if you could digitize that tribal knowledge?



## The Rise of AI in Industrial Operations

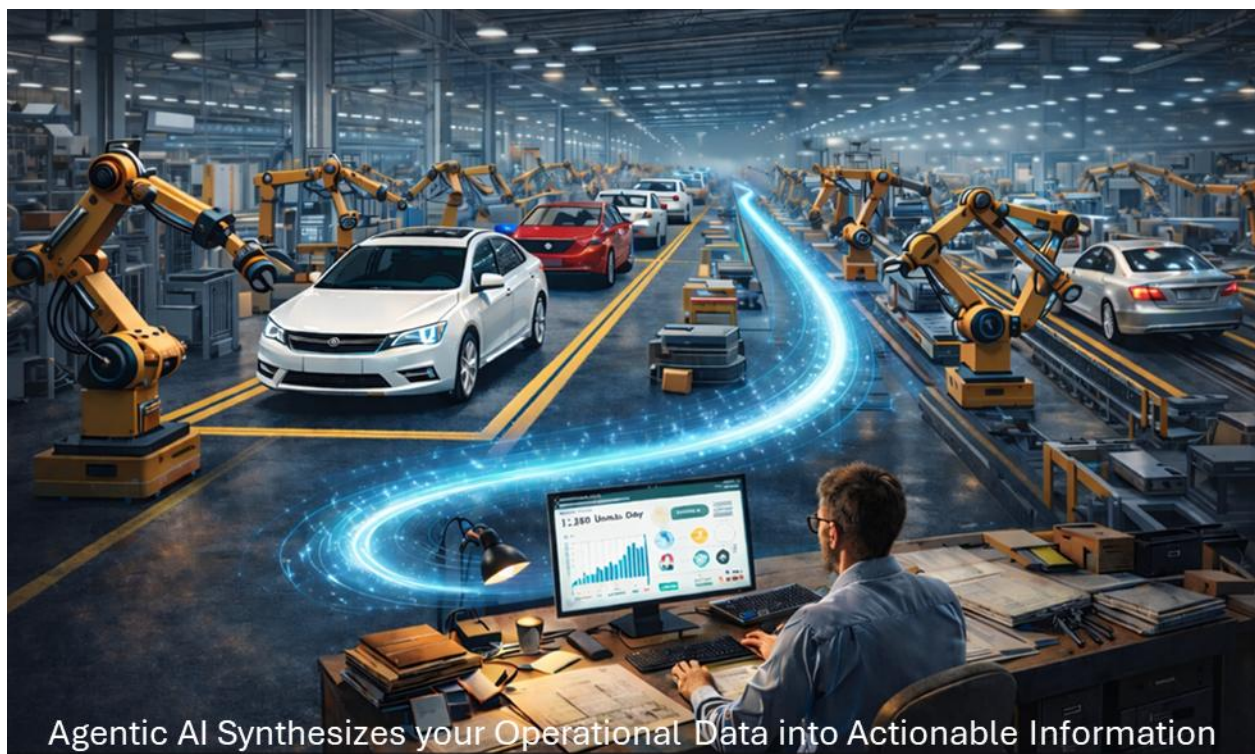
Agentic AI software flips the legacy model. Instead of starting with a canned one-size-fits-all platform and forcing workflows to align to it, Agentic AI begins with the work itself: how tools are serviced, how failures occur, how quality drifts, how downtime unfolds, and how plants respond in real time. From that vantage point, Agentic AI software adapts its rules and agents and becomes a living system that learns how a plant actually operates. It identifies even the smallest patterns in the nearly countless variations in the process and logically infers causes.

In reliability and maintenance, this means understanding not just when assets fail, but why. It can discern if Preventive Maintenance activities are effective or should be adjusted and suggest what changes would be appropriate. As it learns, it can predict when assets will fail, down to the number of cycles remaining and/or time until failure, and it can suggest a course of action to minimize the impact of the failure. It can correlate torque data, tool usage, service history, quality metrics, downtime events, and operator feedback into a unified operational picture. It means capturing tacit knowledge and turning it into actionable intelligence that scales across shifts, lines, and facilities. This is where Agentic AI becomes transformative.

Instead of simply analyzing historical data, modern Agentic AI systems learn patterns, predict failure risks, recommend corrective actions, and can even automate workflows. They surface early warnings before breakdowns occur. They identify subtle trends humans miss. They translate raw operational data into decisions that technicians, supervisors, team

leaders, and engineers can act on immediately. The result is not better dashboards. It is real-time, actionable, operational information and proactive suggestions that provide for better control of the overall operational process and thus better P&L results.

Good Agentic AI platforms synthesize the data from all of the software systems and equipment simultaneously and thus create one source of truth from which decisions can be made and proactive actions can be initiated, thereby driving the process through the windshield and being ahead of what is going to happen next. For example, the AI software should identify when specific models are run back-to-back and particular operators in specific locations start to fall behind the takt time, or begin to create quality problems. It can identify that the same back-to-back models are forecast to run in today's production and proactively suggest that the production sequence be modified and/or suggest which operators should be moved to which positions to achieve the best outcome.



Really good Agentic AI platforms have digital twin capabilities and co-pilot functionality. The digital twin allows the AI software to play out “what if” scenarios and find the most beneficial operator placement, optimal production scheduling, best equipment utilization, etc., to ensure the maximum potential system throughput for the day. It has co-pilot functionality that allows operations personnel to ask questions, in plain English, and it will provide answers. However, a co-pilot interface is only as good as the data/information it sits atop of. If it taps into the knowledge gained from an Agentic AI system, sitting as a thin client across your enterprise, synthesizing all the data, the opportunities are limitless. For example, operations personnel can validate or dispel hunches they may have. They can quickly leverage birth history and operational data to minimize containment activities and/or to quickly root-cause warranty issues and proactively identify the patterns that led to the issues in order to prevent them from occurring again in the future.

## From Service Data to Operational Intelligence

One of the most underutilized assets in manufacturing is service data. Every repair, calibration, inspection, failure, and rebuild contains valuable insight into how equipment behaves in the real world. Historically, this data lived in work orders, technician notes, spreadsheets, and disconnected databases. For this reason, its value has remained largely untapped.

When structured properly, service data becomes a predictive engine. Many good things begin to happen (patterns emerge, failure precursors become visible, maintenance intervals optimize themselves, spare parts strategies tighten, tool selection improves, quality escapes decline, etc.). As this happens, plants move from reactive maintenance to proactive reliability. This is the foundation behind modern Agentic AI platforms like RhiKnows, available from Rhino Tool House.

By capturing service history, tool performance, operational conditions, and quality outcomes in a single system, RhiKnows creates a feedback loop between the shop floor and the engineering team. Every job, every failure, and every success becomes continuous improvement data for the system. Over time, the system learns and provides valuable insights and information to the plant. That learning rapidly compounds.

Plants running RhiKnows begin to see earlier warnings, fewer surprises, and more stable production. Maintenance becomes more planned and less heroic firefighting. Reliability engineers shift from reactive problem-solving to thoughtful and calculated optimization. Leaders gain visibility into risks before they become outages. This allows leaders to focus their efforts on planning, strategic decisions, and longer-term initiatives.

## AI That Complements, Not Complicates

In industrial settings, AI only delivers value if it is trusted and simplifies work. If it hallucinates and/or adds complexity, it gets quickly ignored.

Modern Agentic AI platforms succeed because they embed intelligence directly into existing workflows. Recommendations appear where decisions are already being made. Alerts surface in context. Automated actions remove steps instead of adding them.

Rather than replacing skilled labor, Agentic AI amplifies it. Operators receive more real-time feedback and are placed in stations where they are more likely to succeed than to fail. Technicians gain faster diagnostics. Engineers get better and faster root cause analysis. Supervisors see risk patterns earlier. Planners optimize schedules dynamically. Everyone spends less time chasing information and more time acting on it.

Over time, this creates a new operating model. Instead of reacting to failures, plants start managing outcomes. Instead of scheduling maintenance based on time intervals, they adjust dynamically based on actual usage, load, and risk. Instead of relying on tribal knowledge, they leverage institutionalized experience.

## Why Manufacturing Is Ready for This Shift

Three forces are rapidly converging as headwinds for industrial operations.

First, a general labor shortage makes it difficult to train and retain front-line operators for industrial operations.

Second, skilled trade labor shortages are intensifying. As experienced technicians retire, plants must find ways to preserve institutional knowledge and accelerate training. This problem has been exacerbated as our youth have been led to undervalue trade schools in favor of universities. This has created a generational gap in skilled trades.

Third, uptime, productivity, and overall performance expectations continue to rise. Just-in-time production, lean inventories, and tight delivery schedules leave little margin for error. Industrial Operations need earlier warnings and faster response loops.

So, what has changed? Infrastructure and computing power have finally matured. IoT sensors, connected tools, and digital service platforms now generate rich operational data streams. Now, a well-designed AI software platform is capable of converting the ocean of manufacturing data into actionable information and real-time intelligence.

Great industrial AI platforms are designed not only to counteract the headwinds but to manage successful outcomes. RhiKnows was designed specifically to help industrial operations to perform optimally and drive better P&L results. Managing industrial operations is like trying to constantly adjust the variables in a very complex polynomial; as an adjustment is made to improve one metric, it can inadvertently detract from another. RhiKnows was designed to continuously optimize the polynomial for everything: safety, quality, delivery, cost, reliability, and morale. A system that drives proactive continuous improvement and leverages people for their innate strengths naturally increases morale.

## The Path Forward

Over the next decade, manufacturing leaders will increasingly differentiate themselves not by the machines they buy, but by the intelligence they build into those systems. Leaders who get beyond trying to protect their data and start to focus on leveraging their data, turning it into actionable information, will compound advantages and institutional knowledge year after year. Plants that continue relying on tribal knowledge and static systems will struggle to keep pace.



Good industrial AI platforms will not replace people. It will preserve their knowledge, amplify their impact, and scale their experience. That is the opportunity RhiKnows is built around: turning an ocean of data into actionable information and suggested courses of action and institutionalizing that knowledge. A system that learns and keeps pace with the changes within the processes and makes plants more reliable, more predictable, and more profitable over time. Not by changing how people work, but by finally giving them software that understands the work they already do.



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