Manufacturing meets AI

DMS manufacturing supply chain maturity score: Aligning technology with supply chain maturity. Elton Brown, DMS Senior Business Consultant explains.

Artificial Intelligence (AI) is revolutionising supply chain planning, but a one-size-fits-all approach doesn't work. AI isn't just for highly advanced supply chains; regardless of maturity, every company can benefit. The key is aligning AI adoption with current capabilities rather than rushing into advanced solutions without a solid foundation. However, blindly implementing AI—without understanding your supply chain maturity or selecting the right technology partner—can be risky. AI success depends on choosing tools suited to your needs and ensuring proper integration.

The Five Levels of Manufacturing and Supply Chain Maturity and AI Readiness

A Supply Chain Maturity Model helps businesses assess where they stand and determine what AI can offer at each stage. While various models exist globally (Gartner, Oliver Wight, Deloitte, PwC, SCOR), the DMS Manufacturing Supply Chain Maturity Score is tailored to Australian and New Zealand manufacturers. This model evaluates people, processes, technology, strategy, and collaboration, helping businesses identify strengths, weaknesses, and AI opportunities.

Here's how AI fits into each maturity stage:

1. **Disjointed Manufacturing Supply Chains (Low Maturity)** Limited processes, poor visibility, reactive decision-making. At this stage, supply chains operate in silos, with minimal data integration, leading to inefficiencies. AI adoption should focus on basic automation and data cleansing to improve visibility and reduce manual work.

   AI Focus: Data standardisation, rule-based automation, entry-level reporting tools.

   Risk if ignored: Implementing complex AI without a strong data foundation leads to poor recommendations and inaccurate insights.

2. **Rudimentary Manufacturing Supply Chains (Basic Maturity)** Some digital tools, manual forecasting, limited data-driven decision-making. Companies at this level often use ERP systems but lack integrated planning tools, relying on spreadsheets. AI should focus on proven statistical models for demand forecasting and replenishment, reducing reliance on intuition.

   AI Focus: Predictive analytics, demand forecasting, replenishment automation.

   Risk if ignored: Without AI-driven forecasting, companies struggle with stockouts and excess inventory, increasing carrying costs.

3. **Defined Manufacturing Supply Chains (Intermediate Maturity**) Structured processes, better visibility, improving collaboration. These supply chains have well-established processes and some digital integration but lack agility. AI can optimise inventory, automate purchasing, and enhance visibility.

   AI Focus: Machine learning for inventory optimisation, near-real-time demand sensing, automated exception management.

   Risk if ignored: Without AI-powered automation, supply chains remain slow to react to disruptions, missing efficiency gains.

4. **Dynamic Manufacturing Supply Chains (Advanced Maturity)** End-to-end digital integration, data-driven decision-making, agility in responding to changes. Companies at this stage use real-time data for decision-making but still rely on human intervention. AI should now enable scenario modelling, automated decision-making, and prescriptive analytics.

   AI Focus: Digital twins, advanced prescriptive analytics, AI-driven scenario planning.

   Risk if ignored: Without AI decision-support tools, companies may struggle to scale efficiently and stay competitive in fast-changing markets.

5. **Visionary Manufacturing Supply Chains (Best-in-Class Maturity)** AI-driven, autonomous operations, proactive risk management. At this level, AI isn't just a tool—it drives decision-making. Supply chains operate autonomously, responding to live data and market conditions.

   AI Focus: Autonomous planning, continuous network optimisation, intelligent order response.

   Risk if ignored: Companies failing to reach this level risk falling behind AI-native competitors using AI for full decision automation.

Avoiding the Pitfalls of Poorly Aligned AI Adoption

AI delivers value at every maturity level, but misalignment can backfire. Common pitfalls include:

• Investing in AI that doesn't match maturity: Deploying an AI-powered digital twin when data is fragmented won't yield results. • Lack of integration with existing systems: AI should enhance ERP, WMS, and TMS systems - not operate in isolation. • Resistance to AI adoption: AI success requires executive buy-in and workforce upskilling. Companies failing to train teams on AI adoption are 2.5x more likely to struggle with implementation (Oliver Wight, 2023).

Selecting the right technology partner is as critical as selecting the right AI. The best partners tailor AI adoption to your current state while building a roadmap for future advancements.

Finding the Right AI Strategy for Your Manufacturing and Supply Chain

AI is for everyone—but not all AI is for everyone. Success lies in matching AI solutions to your current capabilities while preparing for the next level of maturity. Instead of asking, "Is my supply chain ready for AI?" - the better question is:

"What kind of AI is right for my manufacturing and supply chain?"

With the right AI solution - aligned to your maturity level and supported by the right partner - your supply chain can increase efficiency, reduce risk, and build long-term resilience.

Final Thoughts

AI is no longer a futuristic vision - it's here and accessible to all supply chains. By assessing where you are today and implementing AI aligned to your maturity level, you can unlock its full potential while avoiding misalignment and wasted investment.

So, where does your supply chain sit on the DMS Manufacturing Supply Chain Maturity Score? The answer could shape your AI journey for the future. **manufacturingmaturityscore.com**