AI after the hype: How SEAMS members are putting it to work

By Devin Steel

From custom software development and inventory management to production planning and continuous improvement, manufacturers are finding practical applications for artificial intelligence — while navigating challenges involving data, integration and employee acceptance.

Artificial intelligence is moving beyond the hype and into the daily operations of U.S. textile and sewn products manufacturers, with companies finding new ways to improve efficiency, manage information and make better business decisions.

But as SEAMS members are discovering, successful adoption isn't necessarily about investing in sophisticated technology or overhauling an entire operation. Often, it begins with identifying a problem, experimenting with available tools and building on what works.

AI was a prominent topic at the recent SEAMS Fall Networking Conference last month in New Orleans, where presentations by Mitch Cahn, Joe Parrish and Aiden Meany explored the technology's potential and practical applications.

To continue that conversation, SEAMS asked members how they are using AI today, where they see the greatest opportunities and what challenges stand between experimentation and broader implementation.

Responses from InnovaKnits, Fechheimer and ISAIC (Industrial Sewing and Innovation Center) reveal different approaches but a common theme: AI's greatest value may lie in helping manufacturers make better use of the information, people and resources they already have.

Building AI into everyday operations

For Neil Tagner, Owner and CEO of InnovaKnits, a knitting company based at SEAMS member the Manufacturing Solutions Center in Conover, NC, AI has become an important part of running the business.

One of his most ambitious projects involves using OpenAI's Codex to help develop a custom enterprise resource planning (ERP) system tailored to the company's operations.

Rather than adapting InnovaKnits' processes to an off-the-shelf software package, Tagner is building a system around how the company quotes, develops, schedules and manufactures knitted products.

"That has been working amazingly well so far," he said.

Tagner also uses ChatGPT extensively to manage customer communications, projects, follow-ups and daily responsibilities. With much of a small manufacturer's operational information buried in emails and conversations, AI helps transform that information into actionable tasks.

InnovaKnits' production manager, Eric, is using ChatGPT to organize production priorities and manage his workload.

For Tagner, the key has been moving quickly from curiosity to application.

"I didn't want AI to become something we spent six months talking about before actually doing anything with it," he said. "I started using the tools on real problems inside the company and figuring out where they were useful."

At Fechheimer, a Berkshire Hathaway company, President Denny Bogard described a broader approach that combines everyday productivity tools with applications built around company data.

Microsoft 365 Copilot is being used to draft emails, research topics, summarize meetings and transcripts and help employees process information more efficiently.

The company is also developing AI capabilities using Microsoft Fabric and Microsoft Foundry.

One example is a sales enablement assistant that allows employees to ask questions about sales and inventory information in everyday language rather than searching through reports.

Fechheimer is also experimenting with an application that combines inventory, production orders, bills of material and demand data to identify excess or stranded raw materials and suggest potential alternative uses.

Other projects are exploring how manufacturing data could help identify production bottlenecks and improve throughput.

Those applications remain in development, Bogard emphasized, but they illustrate how AI could move beyond general office productivity and into manufacturing decision-making.

Finding opportunities on the factory floor

For Lionel Vargas Cruz, Vice President of Advanced Manufacturing and Innovation at ISAIC, AI offers opportunities to improve manufacturing efficiency without placing additional pressure on workers.

ISAIC uses generative AI regularly for data analysis and workflow development, including creating transcriptions for video-based standard operating procedures.

The organization is also partnering with Khenda, a technology company that uses AI to analyze manufacturing videos, conduct time studies and provide information supporting continuous improvement.

Vargas Cruz sees particular value in identifying inefficiencies that might otherwise go unnoticed.

He believes manufacturers sometimes focus too heavily on increasing employee output without fully understanding the process bottlenecks and overhead costs that limit productivity. AI, he suggested, could help organizations identify those problems and make better use of limited engineering and management resources.

Without a dedicated engineering team, Vargas Cruz handles many engineering responsibilities himself while also helping lead the organization. He is experimenting with tools that can evaluate inquiries submitted through ISAIC's website and generate responses based on the nature of those requests.

AI has also helped him produce more useful initial drafts of documents and other materials, reducing the time required to complete projects.

Still, he believes the technology must support employees rather than displace them.

"I would love to see AI used in a way that supports the people that work in our spaces rather than removing them from the equation," he said.

The next frontier: Better manufacturing decisions

Although the organizations are using different tools, all three respondents identified production planning and operational decision-making as major opportunities.

At InnovaKnits, Tagner must coordinate multiple customers, products, knitting machines, delivery dates, yarn requirements and development projects.

A change in one production order can affect several others, making scheduling a complex and constantly evolving process.

"If AI can eventually look at all of that information together and help optimize the production schedule in real time, I think that could be extremely valuable," he said.

He also sees potential in estimating and quoting custom textile products. Two products that appear similar can require significantly different machine time, labor and development resources. By analyzing historical production information, AI could eventually help

manufacturers develop more accurate estimates and identify potential problems before submitting quotes.

At Fechheimer, Bogard sees similar opportunities in connecting information from ERP, manufacturing, sales, inventory and reporting systems.

"The hard part has always been getting the right information together at the right time and making sense of it," he said.

Instead of requiring employees to locate and interpret multiple reports, AI could allow them to ask a business question and receive an explanation based on relevant company data.

The possibilities include inventory reduction, production planning, capacity analysis, bottleneck identification and improved throughput.

Bogard believes the next stage will involve AI agents and applications that combine business information with operational knowledge rather than relying solely on general-purpose chatbots.

The challenges: Data, integration and trust

Despite the potential, implementing AI in manufacturing is not without obstacles.

For Tagner, one of the biggest challenges is connecting information scattered across accounting systems, spreadsheets, emails, machine programs and other applications. AI becomes more useful when it can analyze information across those systems, but integrating them can be difficult.

He also cautioned that manufacturers must distinguish impressive technology demonstrations from applications that deliver measurable value.

Bogard agreed that data quality and business context are critical.

"AI can give you a very convincing wrong answer if the underlying data or business rules aren't right," he said.

Fechheimer has been developing its Microsoft Fabric data models to provide AI applications with more reliable access to business information. The company is also testing applications against actual business scenarios, evaluating where they fail and refining them before broader deployment. Security and governance are part of that process.

Another challenge, Bogard said, is the rapid pace of technological change. In some cases, the technology has evolved enough during development that the company has reconsidered its approach before putting a proof-of-concept application into production.

Vargas Cruz identified data quality, available expertise and employee acceptance as significant obstacles, particularly for smaller sewn products manufacturers.

"Many sewn products factories still run on paper bundle tickets, whiteboards and tribal knowledge," he said. "You can't apply AI to a process you haven't standardized and measured. That's a Lean problem before it's a technology problem."

He also emphasized the importance of introducing AI in ways that earn employees' trust.

"If AI is introduced as surveillance or headcount reduction, it'll fail," he said. "If it's introduced as a tool that removes frustration, it has a chance."

Vargas Cruz acknowledged that ISAIC is still evaluating how best to deploy the technology, including weighing its benefits against potential environmental and other risks. He has developed an AI strategic plan with guidance from a mentor to help ensure implementation supports the organization's mission.

A competitive advantage for U.S. manufacturing?

Looking ahead three to five years, the respondents expect AI to become increasingly important to textile and sewn products manufacturing, although its impact may be felt more in business processes and decision-making than in replacing physical production.

Tagner believes AI could help domestic manufacturers compete through greater speed, flexibility and the ability to manage complex, lower-volume and higher-value production.

"We aren't always going to win based purely on labor cost," he said. "We have to become faster, more flexible and better at handling complicated, lower-volume and higher-value manufacturing. I think AI can help us do that."

Bogard expects AI to become an ordinary part of business operations, much like analytics, cloud computing and automation.

"I don't think people will necessarily think about whether they're 'using AI,'" he said. "It will just be built into the applications and processes they use every day."

Vargas Cruz hopes AI will help smaller manufacturers overcome resource constraints, reduce workflow bottlenecks and make automation programming more accessible to people entering the industry.

For him, the measure of success is not simply how much technology a company adopts, but whether it improves the working environment and helps people become more effective.

Start small, solve real problems

For SEAMS members wondering where to begin, Tagner and Bogard offered remarkably similar advice: Start with a specific business problem rather than an ambitious technology initiative.

"Don't start by asking, 'How can I use AI?'" Tagner said. "Start with something you already hate doing, something that takes too much time or something your company struggles to keep organized, and see if AI can help with that."

Bogard encouraged companies to select measurable applications, involve the people who perform the work and pay close attention to data quality.

"A user's first experience matters a lot," he said. "If the first tool gives them bad information, it can be hard to get them to try the next one."

The experiences of these SEAMS members suggest that AI adoption does not require every manufacturer to follow the same path. A small knitting operation developing its own ERP system, an established manufacturer building applications around enterprise data and ISAIC exploring video-based process analysis are all finding different entry points.

What connects their efforts is a practical focus on solving problems, improving decisions and supporting the people responsible for getting products made.

For an industry facing continued pressure to improve productivity, control costs and compete globally, that may be AI's most immediate opportunity — not replacing the expertise that drives American manufacturing, but helping put it to better use.