

Industry in Focus

Artificial intelligence in life sciences supply chain

Hype or the next general-purpose technology?

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Is AI the next big disruptor in your supply chain – do you believe the hype?

Artificial Intelligence (AI) has been part of the technology vocabulary for decades, but it's been thrust into the spotlight over the past 12 months since ChatGPT made Generative AI (GenAI) publicly available. AI is now driving a global conversation on the role of technology in our personal and professional lives – at home, in the boardroom and in government, people are asking 'is this all just hype?' and 'what can AI do for me?'.

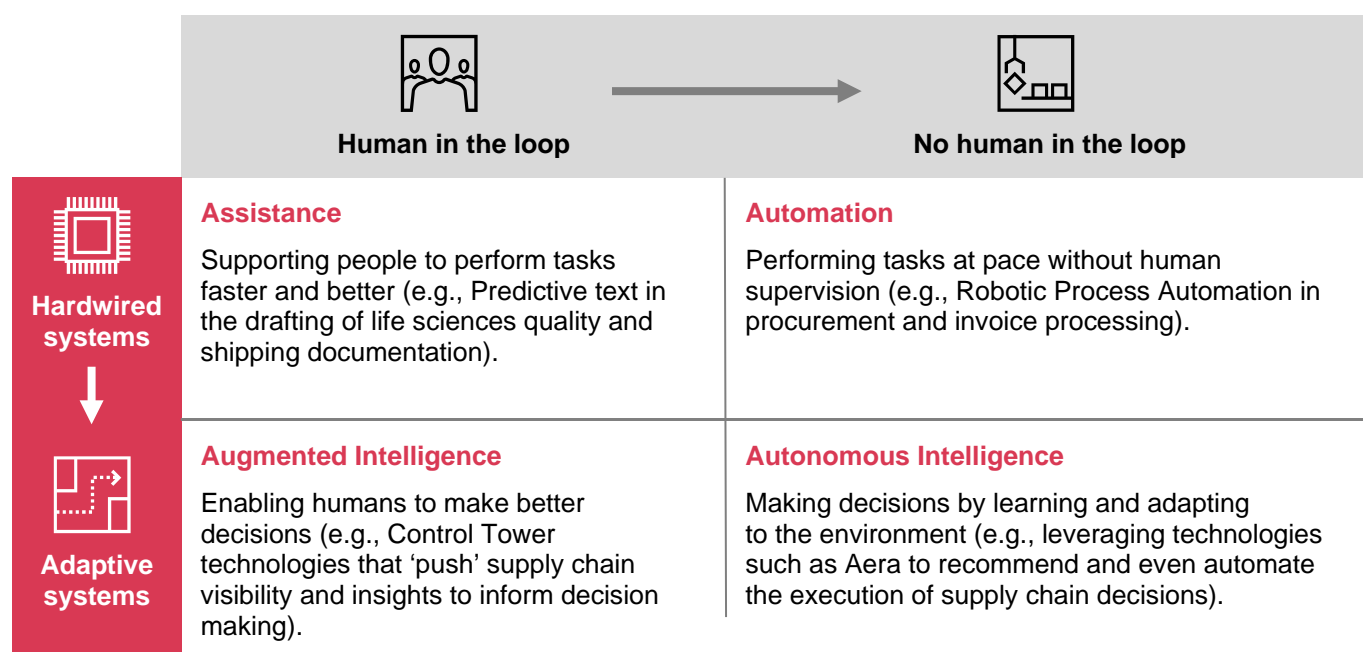
With a highly regulated supply chain that demands excellence and innovation throughout, these questions are particularly relevant for decision makers in life sciences companies as they face ongoing disruption due to macroeconomic factors like inflation and geopolitical instability, as well as the challenge of managing complex global supply networks and Environmental, Social and Governance (ESG) obligations.

In this article we will explain why we believe AI is not hype but that it is becoming a General-Purpose Technology (GPTⁱ) that can transform your supply chain. In addition, we set out the three steps you should take to start your AI journey.

Let's first consider what a General-Purpose Technology (GPT) is. Simply put, a GPT is a technology that drives economic growth and transforms 'both household life and the ways in which firms conduct business'ⁱⁱ. Modern-day GPTs include spreadsheets, cloud-based computing and the SWIFT banking system. Much like these technologies, [AI is showing wide applicability across the life sciences value chain](#)ⁱⁱⁱ. Specifically, AI presents immediate use cases in demand forecasting, manufacturing, and inventory and logistics management, with the ability to understand not only the manufacturing and supply chain parameters within a business's span of control, but also consider customer preferences and real-time external factors such as weather and geopolitical events in order to make real-time recommendations. So, AI isn't just hype. It's an enabler with enormous potential to make life sciences supply chains resilient, responsive and smart.

How does AI achieve this? Well, it has a distinct ability – the ability to learn.

AI is differentiated by its ability to learn



Source: PwC

Traditional non-AI supply chain technology – such as a demand planning tool or transport management system – may be serving you well, helping your business users within the confines of its ‘hardwired’ programming. AI, however, is proffering ‘adaptive systems’ that can see patterns in what it is exposed to, learn from them and recommend a course of action. With the right governance and controls in place, companies can even automate business process execution and decision-making.

As a result, human intervention can be optimised for value adding activities whilst the technology takes care of repetitive and task-based work. For example, AI-powered tools can continuously plan and optimise transport routings or production schedules and issue instructions to third-party logistics providers or contract manufacturers, whilst human operators focus on exceptions and negotiations with customers and suppliers.



We don't yet know the full potential of AI. We do know, however, that it can increase the number and the quality of decisions you make in your supply chain. This is due to its ability to expand the breadth of data points you can feed into your decision-making frameworks, consider each piece of information and suggest or make many more decisions than a human operator.

Today, many of these decisions may be considered ‘minor’ – a tweak to a medical device production schedule, a movement of vial inventory from one location to another, or allocation of a drug product shipment from the usual logistics provider to one that is showing slightly better performance on a given transport lane. Without AI, each of these decisions will require the time and effort of a human operator, or several operators. With AI, however, these decisions represent a collection of real-time optimisations that may significantly enhance service levels and reduce cost. What could this potential mean for your supply chain?

Adopting and benefiting from AI in supply chain

The recent momentum behind GenAI is highlighting numerous use cases for efficiency improvement in business-critical processes, particularly where documentation and text play a key role. In the Life Science industry there is a multitude of key processes that rely on documentation and text. For example, ensuring that labels and packaging are compliant with regulatory requirements, issuing and synthesising RFQs/RFPs, and auditing supplier

documentation is dependent on a clear understanding of documented materials as well as an ability to draft materials in response. GenAI-powered tools can automate the synthesis and drafting of documents, significantly reducing the time required to 'get up to speed' or increasing the rate at which your business can execute a vendor selection process.

Beyond GenAI use cases, as AI can power large and complex data models, it is ideal for life sciences supply chains that typically collect data spanning manufacturing and logistics, customer experience, chain of custody and quality control. Life sciences logistics operations, for example, are often impacted by weather conditions, geopolitical events or industrial action at transit points that may be outside the direct control of the shipper and these data points are not typically built into traditional supply chain management models. However, they could help to build a more comprehensive view of what is happening on the ground. Shippers, logistics partners, air and ocean carriers, customs authorities, consignees and even healthcare providers are all a source of data and insights that can contribute to our understanding of where the global supply chain is working well and where it is under threat. They all contribute to the 'bigger picture'. AI-based tools can be leveraged to analyse such quantitative and qualitative data points and make real-time recommendations in daily operations or provide insights for longer-term strategic planning.

For most supply chain executives, however, knowing where to start and knowing how to move beyond the hype is probably the greatest challenge they face today. Here are three steps that you can take to start adopting AI in your supply chain:

1

Conduct an end-to-end health assessment of your supply chain and identify opportunities for optimisation through AI

Approach this with AI's strengths in mind –

- What are the supply chain challenges that require analysis of large quantitative and qualitative data sets?
- Which areas rely on identifying patterns that may be invisible to the human eye?
- Which problems or processes take a long time to analyse, involve data points from multiple sources and make fast and accurate decision-making difficult?

These are the types of challenges where AI can help you most – use this understanding to make a shortlist of the AI opportunities in front of you and open the conversation on how you can take advantage of them.

2

Put the AI discussion in the hands of your people

Create a forum to educate your teams about the potential of AI, how it works, what it needs to function and how it can deliver the most value. This will energise your team and motivate them to identify new use cases, specific to your supply chain. Ultimately, this is about building trust in the outcome and that includes involving the end user in shaping and testing the technology. In our own organisation, we have made AI part of our everyday life across all service lines, to supercharge our identification of opportunities, boost productivity and make better decisions.

3

Identify AI use cases that will deliver competitive advantage with quick time-to-value

Focus on one or two real world challenges from your supply chain health assessment and assemble a cross-functional team with technology expertise to develop a business case for AI adoption – allow your team to put their learnings into action to dispel the 'hype' and build trust in the possibilities it presents. This measured but forward-thinking approach will bring your people on a journey they want to be on and ensure you 'walk before you run' when it comes to committing investment to AI transformation. And it can also act as a springboard for your organisation to effectively identify, design and implement the larger scale AI-powered transformation with confidence.

These steps are just the start. AI is moving fast and producing new opportunities to get ahead and create value in your peers' and customers' supply chains everyday - it will redefine your competitive landscape and customer expectations as it transforms supply chain processes and decision making. Take these steps to put your business on a strong footing to first understand AI and rally your people to understand whether or how they can take advantage of it.

Contact Us

The time to harness the full potential of this emerging and ever-evolving technology is now - don't risk being left behind. Get in touch with us today to discuss how you can give your people a sense of the possibilities presented by AI and empower them to develop transformational value cases across your supply chain.



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ⁱ GPT (General Purpose Technology) is not to be confused with GPT from ChatGPT; the latter stands for 'Generative Pre-trained Transformer'

ⁱⁱ Boyan Jovanovic, Peter L. Rousseau, Chapter 18 - General Purpose Technologies, Handbook of Economic Growth, Elsevier, Volume 1, Part B, 2005, Pages 1181-1224, ISSN 1574-0684, ISBN 9780444520432

ⁱⁱⁱ 'GenAI: Which industries and sectors have the greatest potential for value creation?' – Strategy& – [click here](#)