



AI & the Future of Global Trade

Post-event Article

This webinar examined where AI can deliver measurable value in global trade, from fragmented data and regulatory complexity to workflow redesign and competitive advantage.

On 29 September 2026, the NBS Knowledge Lab hosted a webinar on “AI & the Future of Global Trade”. Moderated by Associate Professor Tan Joo Seng from the Division of Strategy, International Business and Entrepreneurship at Nanyang Business School, the session featured Eric Tan, CEO and Founder of CWH International, and Penny Chen, CEO of Pax Solutions Inc. Drawing on perspectives from trade advisory, technology and industry practice, the speakers moved beyond broad claims about AI to examine what is changing in global trade, which problems AI can realistically address, and how companies can translate AI use into business value.

Global Trade’s Persistent Frictions

Opening the session, Associate Professor Joo Seng framed global trade as an area where AI’s promise must be tested against operational reality. While AI is often discussed in broad terms as a disruptive or transformative force, global trade remains a deeply complex system shaped by tariffs, customs compliance, documentation, supply chains and multiple regulatory jurisdictions. Many of these processes remain manual, fragmented and difficult to standardise.

Eric located the core challenge in volatility. At the macro level, companies are operating in an environment shaped by geopolitical uncertainty, shifting regulations and changing free trade agreements. The sharp rise and movement of US tariff measures, for example, has created both cost exposure and new opportunities for companies that can respond quickly. Eric also pointed to changes in US duty drawback rules and the continued growth of free trade agreements as examples of how regulatory shifts can create openings for firms that are able to interpret and act on them.

At the micro level, however, the problem is more structural. Eric described global trade as an environment marked by a lack of standardisation. Rules of origin vary across free trade agreements, countries maintain different preferential rates, and even basic documentation requirements can differ across markets. Something as seemingly simple as an invoice can require different formats or information depending on the destination country. For firms managing cross-border operations, these differences create friction, cost and operational risk.



Yet the speakers were clear that complexity should not only be viewed as a burden. Eric cited a company that reconfigured its supply chain and manufacturing footprint in response to expanded US duty drawback rules, unlocking almost US\$100 million a year in savings. The point was not that duty drawback, tariff refunds and preferential tariff treatment are interchangeable. Rather, each mechanism operates differently, and firms that understand the specific regulatory conditions behind each one can identify opportunities that others miss. In global trade, value is often created by knowing which mechanism applies, what data is required, and how timing and supply chain design affect eligibility.

AI as a Coordination Tool

Penny approached the issue from the technology side, describing global trade as, at its core, a coordination problem. Trade data is often scattered across entities, countries, systems and functions. Product data, supply chain data, regulatory information and institutional decision-making frameworks are rarely housed in one place. This fragmentation makes it difficult for companies to make timely and cost-effective import, export and compliance decisions.

For Penny, this is precisely where technology can help. Pax Solutions Inc is working towards what she described as a “global trade in a box” concept, consolidating not only trade data but also the contextual knowledge and decision-making logic that firms rely on. In her view, trade compliance is not necessarily hard because the underlying principles are impossible to understand. It is hard because the information is fragmented, the context is dispersed, and the decision-making process is often buried in institutional knowledge.

AI is well suited to this type of problem because it can ingest large volumes of information and surface suggestions more quickly than a manual process. Penny compared AI to a “very smart intern”: useful for absorbing complex information, identifying patterns and generating recommendations, but still requiring supervision and review in high-stakes contexts.

This distinction helps separate practical AI use cases from broad hype. AI does not make global trade simple. Rather, it helps firms manage coordination challenges by consolidating information, accelerating analysis and making insights more accessible to decision-makers.

Where AI Moves the Needle

The discussion then turned to where AI is already changing practice. Penny noted that her own work as an engineer and research scientist has shifted dramatically. Where she once had to write code line by line, AI agents now generate much of the code, with humans reviewing and refining the output. She observed that this pattern is spreading beyond engineering into sales, marketing and other business functions, where individuals can use multiple AI agents to work across channels and tasks.



In the context of global trade, Penny offered the example of import-export analytics. Customers that previously had to parse through millions of lines of import and export data to identify duty savings opportunities, broker errors or compliance issues can now reach insights much more quickly. What once required hours of manual work can become closer to a one-click process, with analytics, issue identification and duty saving opportunities made significantly more accessible.

Eric agreed that AI will not solve all global trade bottlenecks, but he sees clear disruption in specific, well-defined areas. One example is free trade agreement optimisation, where AI-driven tools can analyse rules of origin, preferential rates and trade data to help firms identify available preferential tariff treatment that they may not be using.

A second example was Pax Solutions Inc in the duty drawback space. Duty drawback is a distinct mechanism that allows eligible firms to recover certain duties paid on imported goods when qualifying goods are subsequently exported or otherwise meet the relevant regulatory requirements. Traditionally, this has been a highly manual field. By applying technology to import and export data, firms such as Pax are able to produce dashboards, identify eligible claims more quickly and challenge incumbents that have relied on labour-intensive review and established relationships.

This does not mean that older firms have no place. Eric stressed that in duty drawback and related advisory areas, regulatory relationships remain valuable. The ability to engage regulators and understand how rules are interpreted still matters. However, firms that fail to improve their technology and efficiency may struggle as AI-enabled competitors raise expectations around speed, transparency and value delivery.

Trust, Accountability, and the Human Role

Because global trade is highly regulated, the question of trust was a central theme. Associate Professor Joo Seng noted that in some trade compliance settings, being 90 or even 95 per cent right may not be good enough. The issue is not only whether AI can produce useful recommendations, but where firms should draw the line between automation, human review and accountability.

Penny's view was that AI should remain a human-in-the-loop process for mission-critical business decisions. This means building checkpoints where people review AI-generated outputs, especially where compliance risk, licensing requirements or regulatory exposure are involved. She added that the number and nature of these checkpoints may change as AI systems improve, but for now, human review remains crucial.

Eric, from the practitioner side, was equally clear that accountability cannot be assigned to the AI tool itself. The responsibility ultimately sits with an individual, department or organisation. AI may be used to support execution, analysis or decision-making, but the final accountability remains human.



This led to one of the most important distinctions in the webinar: AI can shift the nature of human work without removing humans from the process. Eric illustrated this through his own organisation's experience with digitalisation. A UI/UX development project that had been outsourced for around US\$40,000 was later completed through AI coding within a much shorter time. However, this did not eliminate the need for people. Instead, the organisation shifted human effort from writing code to reviewing code, assessing quality and managing the post-development process.

The implication is that AI changes the allocation of work. In regulated or high-trust sectors, firms may reduce time spent on manual production, but they must also invest more deliberately in validation, review and accountability.

From Infrastructure to Competitive Advantage

A recurring question was whether AI can still be a source of competitive advantage if most firms eventually gain access to similar models and tools. The speakers' answer was yes, but only if AI is translated into better decisions, faster execution and outcomes that competitors find difficult to replicate. Associate Professor Joo Seng framed the issue across three levels. First, AI is infrastructure: access to models, tools and data. Second, AI is architecture: how firms redesign workflows, decisions and organisations around the technology. Third, AI becomes competitive advantage only when infrastructure and architecture enable the firm to do something better, differently or in a way that is difficult for competitors to copy.

For Eric, three capabilities are critical. The first is the availability of data for decision-making. Without data, firms are effectively making decisions in the dark. The second is talent with the right knowledge, experience and agile mindset. The third, particularly in areas such as duty drawback and free trade agreement optimisation, is the ability to influence regulators and engage government stakeholders. Firms that cannot influence or anticipate regulatory change risk remaining on the receiving end of decisions made elsewhere.

In this context, AI's main role is to help companies extract more value from their data. Firms that can structure, analyse and act on their data more effectively will be better placed to identify savings, optimise supply chains and respond to regulatory shifts. Those that partner with specialist disruptors may also be able to upgrade capabilities more quickly than competitors that try to build everything internally.

Penny added that AI's accessibility changes the adoption curve. Unlike earlier forms of advanced analytics, large language models are relatively easy to use because both input and output can be in natural language. This lowers the barrier for employees in traditional industries, including manufacturing, import-export and distribution. In her view, companies that provide employees with access to AI tools, training and internal data are more likely to see creative and productive use cases emerge.



The advantage, then, lies not only in technology ownership. It lies in usage, proficiency, integration and learning.

Data Silos and Organisational Barriers

The audience Q&A brought out a practical barrier that many organisations face: data silos. Asked about standardisation challenges across business processes and functions, Eric described these issues as common across departments, countries and regions.

He shared an example of a company that was trying to explore opportunities around free trade agreements. An external technology provider had built a solution, while the company wanted to own the data and build an internal capability. However, the initiative stalled because the project was driven at the global level, while the required data sat across regions and end markets. Different teams held on to their own turf, and no single objective aligned all parties around a common outcome. After six to nine months, little progress had been made.

This example showed that the barrier to AI adoption is not always the technology. In many cases, the required data already exists within the organisation. The harder task is consolidating it, aligning incentives and overcoming internal politics. Without governance and shared objectives, even strong AI tools may fail to deliver value.

The discussion also addressed practical adoption for smaller and more traditional businesses. In response to a question from a participant in the distribution business, Penny noted that AI can support demand forecasting, pricing, inventory allocation and similar operational problems if the company can describe the problem clearly and provide relevant data. However, whether the recommendation is realistic or implementable still requires human judgement.

Eric encouraged businesses to experiment. For business development, market sizing and early opportunity assessment, he sees AI as a useful way to generate quick initial views and test assumptions. For demand forecasting, he suggested that firms can provide historical performance data and ask AI to produce projections, while continuing to assess whether the output makes sense for the business context.

Looking Ahead

Asked about the biggest disruptions over the next three to five years, Eric pointed again to duty drawback and duty optimisation. He expects disruption among advisory firms, customs brokers and established industry players that have strong relationships but are not at the forefront of technological change. This may also lead to consolidation in the industry as clients increasingly expect AI-enabled solutions.



He also noted a shift in boardroom expectations. Companies are increasingly being asked to show what they are doing with AI, sometimes through regular updates. For public-listed firms in particular, the question is no longer only whether savings are being achieved, but how AI is contributing to those outcomes. Associate Professor Joo Seng captured this shift as moving from “show me the money” to “show me what AI delivers”. The emphasis is shifting from AI adoption and experimentation towards demonstrable business value, productivity improvements and competitive advantage. This aligns better to what Eric shared that boardroom requires quarterly progress updates on AI.

In their closing reflections, Penny emphasised that AI will make global trade better, and that greater use will build greater proficiency and competitiveness. Eric returned to the balance between technology and human capability, summarising the discussion as “one third AI, two thirds talent and ability to influence stakeholders”. His advice was straightforward: try it, learn from it and keep improving.

Conclusion

The webinar underscored that AI’s value in global trade lies not in replacing the trade function, but in helping firms manage complexity with greater speed, precision and accountability. Global trade remains fragmented, regulated and deeply dependent on judgement. AI can reduce manual effort, surface opportunities and improve analytical speed, but it does not remove the need for domain expertise, governance and organisational alignment. For business leaders, the immediate opportunity is to identify where trade processes are slowed down by fragmented data, manual review and underused regulatory opportunities. Duty drawback, tariff refund opportunities and preferential tariff treatment under free trade agreements should be understood as distinct mechanisms, each with its own rules, data requirements and value implications. Areas such as duty drawback, free trade agreement optimisation, import-export analytics, forecasting and compliance review remain promising because they combine high data volumes with clear business value. However, firms must be equally attentive to governance, review processes and the human expertise required to interpret and act on AI outputs.

Ultimately, AI will not make global trade simple. It can, however, help firms become faster, sharper and more proactive in how they compete. The advantage will go to organisations that understand their friction points, invest in usable data, give employees room to experiment, and redesign workflows around both machine capability and human judgement. In a complex trading environment, the future will belong not to those who merely adopt AI, but to those who can show what AI delivers.

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