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Solving the “Tariff Puzzle” in an era of uncertainty with data & AI-driven supply chains

The foundation of global economic growth, free trade, is currently experiencing significant instability. As the geopolitical and economic power dynamics of major nations subtly reshape the global economic framework, businesses are increasingly compelled to robustly enhance their preparedness for “geoeconomic” risks. A critical imperative has emerged to establish Supply Chain Management (SCM) systems capable of agilely responding to evolving trade policies, particularly in navigating the escalating complexity of tariffs.

Building a resilient and agile SCM hinges on three key elements.

1. Comprehensive Supply Chain Grasp and Analysis:
It is crucial to constantly monitor the intricate web of supply chains spanning various countries and regions, visualizing potential vulnerabilities and leakage points.

2. Rapid Impact Analysis and Response Acceleration in Unforeseen Circumstances:
When disruptions occur, it is essential to swiftly and precisely analyze their root causes and impacts, and to identify necessary measures to minimize their effects, leading to the consideration of effective countermeasures.

3. Optimization of Procurement, Manufacturing, and Sales:
This requires securing alternative suppliers that can guarantee quality, discerning optimal pricing for cost pass-through, and establishing a system to execute these decisions.

The optimal utilization of data and Artificial Intelligence (AI) is indispensable to master these three key elements. Data and AI enable the connection of siloed data, visualizing opaque structures. They eliminate the arbitrariness of human experience and intuition, providing data-driven options that prioritize objectivity. Furthermore, they facilitate the creation of a system where AI and humans can collaborate for rapid decision-making. It is through the seamless realization of these transformations that data and AI serve as the means to elevate agile and resilient supply chains into strategic assets.

Fujitsu, through “Fujitsu Data Intelligence PaaS (DI PaaS),” an offering within its Fujitsu Uvance business model, developed a new solution in July 2025 to support the construction of supply chains adaptable to the rapidly changing global trade policies. By integrating data and AI technologies, this solution comprehensively supports the enhancement of supply chain resilience and optimal decision-making through three practical approaches: “Profit and cost structure analysis,” “Strategic pricing simulator,” and “Operational change simulator.”

The “Tariff Puzzle" in an era of uncertainty is increasingly likely to become more complex. The optimal implementation and utilization of data and AI are what will swiftly gather the necessary pieces to solve this puzzle and open up a desired future. Let's take a step forward to promptly establish a data and AI-driven supply chain, transforming the risks brought by uncertainty into opportunities for maintaining and enhancing competitive advantage.

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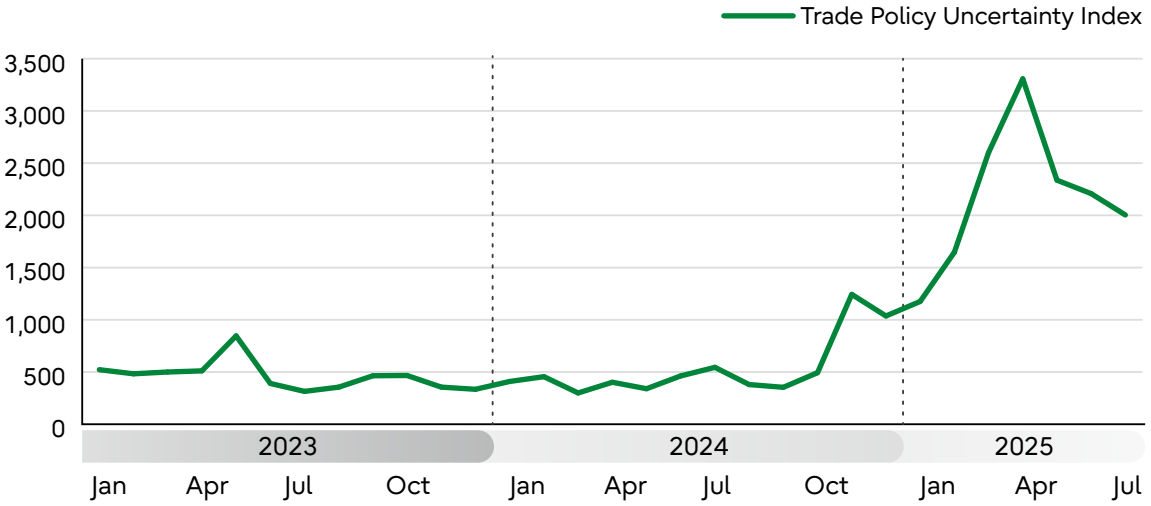
Section 1

The shifting landscape of free trade and increasingly uncertain trade policies

Global uncertainty surrounding trade and tariffs has reached unprecedented levels. The "Trade Policy Uncertainty Index[*1]," calculated by researchers at the U.S. Federal Reserve Board (FRB), stood at 2003.65 as of July 2025 (Figure 1). In February of the same year, it surpassed its previous peak of 1464.67 (recorded in April 2020) to reach 1646.51 and then exceeded 3000 in April 2025. Remaining above 2000 thereafter, the index strongly reflects the increasing uncertainty of future prospects.

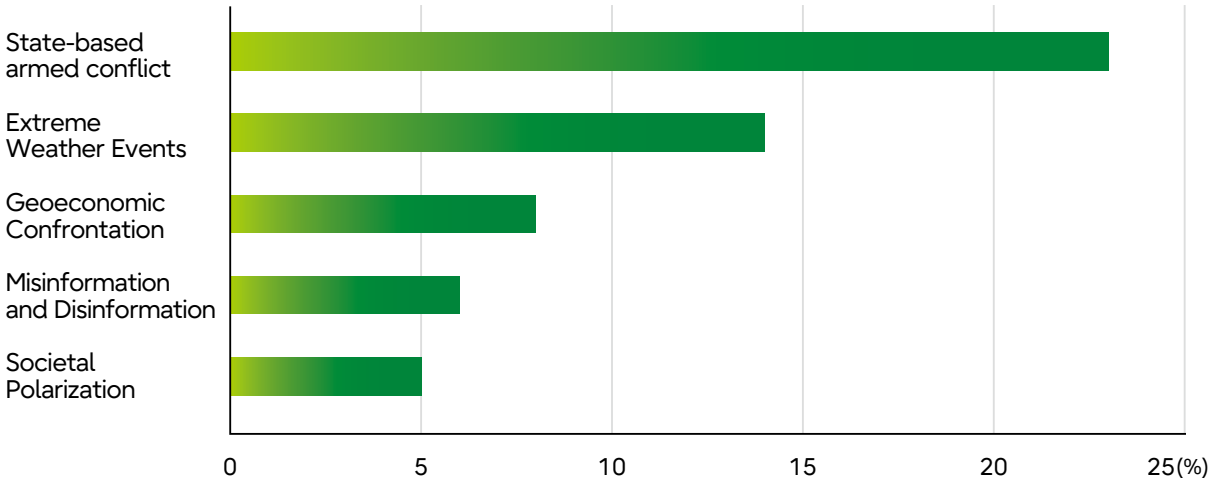
Figure 1: Global trade policy uncertainty remains near record highs



(Source) Created by Fujitsu based on trade policy uncertainty index data.

According to the World Economic Forum's "Global Risks Report 2025[*2]," "geoeconomic confrontation" was cited by 8% of respondents as the risk most likely to cause a significant global crisis in 2025, ranking third after "State-based armed conflict" (23%) and "extreme weather events" (14%) (Figure 2).

Figure 2: Geoeconomic confrontation emerges as a major business risk
Top 5 Risks Selected by Respondents (Percentage of Respondents)



(Source) Created by Fujitsu based on data from the World Economic Forum's "Global risks report 2025."

These two figures highlight the “disruption of the existing international order.” In the post-war era, the world, primarily led by major powers, sought to establish political and economic directions by overcoming inter-state and inter-regional interests. This involved the creation of the United Nations, the establishment of the free trade system, and the conclusion of multilateral alliances and economic partnership agreements. In the business world, decisions were made based on economic rationality, enhancing predictability and fostering growth.

We are now confronted with an era where decisions must be made not only on economic rationality but also by discerning the essence of national and regional principles of action and their historical backgrounds. In particular, the rapidly changing landscape of trade policies and tariffs significantly impacts the success or failure of our businesses. How can we reconstruct agile and resilient supply chains while ensuring economic rationality in such an uncertain and volatile business environment? This will remain a major management challenge, both now and in the future, for maintaining and enhancing market competitiveness and achieving sustainable growth.

According to “The Supply Chain Resilience Report 2024*3” by the international non-profit organization BCI (The Business Continuity Institute), approximately 80% of organizations' supply chains experienced disruptions in the past 12 months. The report also points out that these disruptions are only accelerating. The disruption of the existing international order is becoming increasingly irreversible. While close attention to geopolitical risks is crucial, it is also imperative to respond promptly and appropriately to the uncertainties in trade policies and tariffs.

These uncertainties cannot be completely avoided. What we must do is accept uncertainty as a given and integrate preparedness into our management to maximize our tolerance for various risks. Let us put an end to the era of “What should we do?” We must step into an era of “This is what we will do” –an era of practical action.

*1 Economic Policy Uncertainty Index
https://www.policyuncertainty.com/

*2 World Economic Forum “Global Risks Report 2025”
https://www.weforum.org/publications/global-risks-report-2025/

*3 BCI Supply Chain Resilience Report 2024
https://www.thebci.org/resource/bci-supply-chain-resilience-report-2024.html

Section 2

Building an unshakeable supply chain

To build an agile and resilient supply chain adaptable to an era of uncertainty, there are three key elements. The first is "Comprehensive supply chain grasp and analysis." It is crucial to constantly monitor the intricate web of supply chains spanning various countries and regions, visualizing potential vulnerabilities and leakage points.

The second is "Rapid impact analysis and response acceleration in unforeseen circumstances." When disruptions occur, it is essential to swiftly and precisely analyze their root causes and impacts, and to identify necessary measures to minimize their effects, leading to the consideration of effective countermeasures.

The third is "Optimization of procurement, manufacturing, and sales." This requires securing alternative suppliers that can guarantee quality, discerning optimal pricing for cost pass-through, and establishing a system to execute these decisions.

Let's delve deeper into each of these countermeasures by breaking them down into a total of 10 items.

Comprehensive supply chain grasp and analysis

1) **Deepening visualization:** It is necessary to gain a detailed understanding of bottlenecks and dependencies at each stage of the supply chain. Visualizing the entire supply chain structure and fostering a common understanding among stakeholders is crucial.
2) **Tariff information monitoring:** Continuously monitoring information on tariff rates and trade policies in each country is important to detect early signs of change.
3) **Tariff impact simulation:** It is crucial to simulate the impact of changes in tariff rates on the supply chain and to consider countermeasures in advance.
4) **Real-time monitoring:** Beyond analyzing past data, real-time or near real-time information gathering and analysis are indispensable. It is necessary to integrate all data and establish a system that can constantly grasp the latest situation.
5) **Quantification of risk assessment:** It is important to analyze potential risks using data and establish a system that allows for prioritizing countermeasures. This enables efficient allocation of resources and focused response to more critical risks.

Rapid impact analysis and response acceleration in unforeseen circumstances

6) **Identification of impact scope:** It is necessary to quickly and accurately identify the scope of impact across the entire supply chain. Understanding how localized issues can affect other locations or products is crucial.
7) **Consideration of alternatives:** It is necessary to swiftly explore alternative suppliers, routes, and products. Preparing multiple alternatives enables rapid response even in unforeseen circumstances.
8) **Streamlining decision-making processes:** Clarifying rules and processes for emergency decision-making, and ensuring smooth and clear communication among stakeholders, are important.

Optimization of procurement, manufacturing, and sales

9) **Strengthening supplier relationships:** Securing alternative suppliers who can guarantee quality is important. Enhancing stability can be achieved through information sharing and joint risk management across the entire supply chain.

10) **Improving market forecast accuracy:** It is crucial to establish a system that enables accurate demand forecasting, optimization of inventory and production plans, and optimal pricing based on supply and demand.

To reconstruct a supply chain adaptable to increasingly complex trade policies and tariffs, it is necessary to simultaneously implement as many of these 10 items as possible. Relying solely on extensions of existing measures will be insufficient. The missing pieces will be filled by technology, including data and AI.

Connecting siloed data allows for the visualization of opaque structures. This process eliminates the arbitrariness inherent in human experience and intuition, fostering objective, data-driven decision-making. We can establish systems for rapid collaboration between AI and human intelligence, and formulate optimal, technology-driven tariff strategies and execution plans.

Indeed, data and AI are crucial for seamlessly executing these transformations, thereby elevating agile and resilient supply chains to the status of strategic assets.

In the next chapter, we will introduce Fujitsu's practical approach through its new solution leveraging data and AI. Let's embark on a journey to solve the tariff puzzle in an era of uncertainty, covering these 10 items, and open up new horizons for sustainable competitive advantage.

Section 3

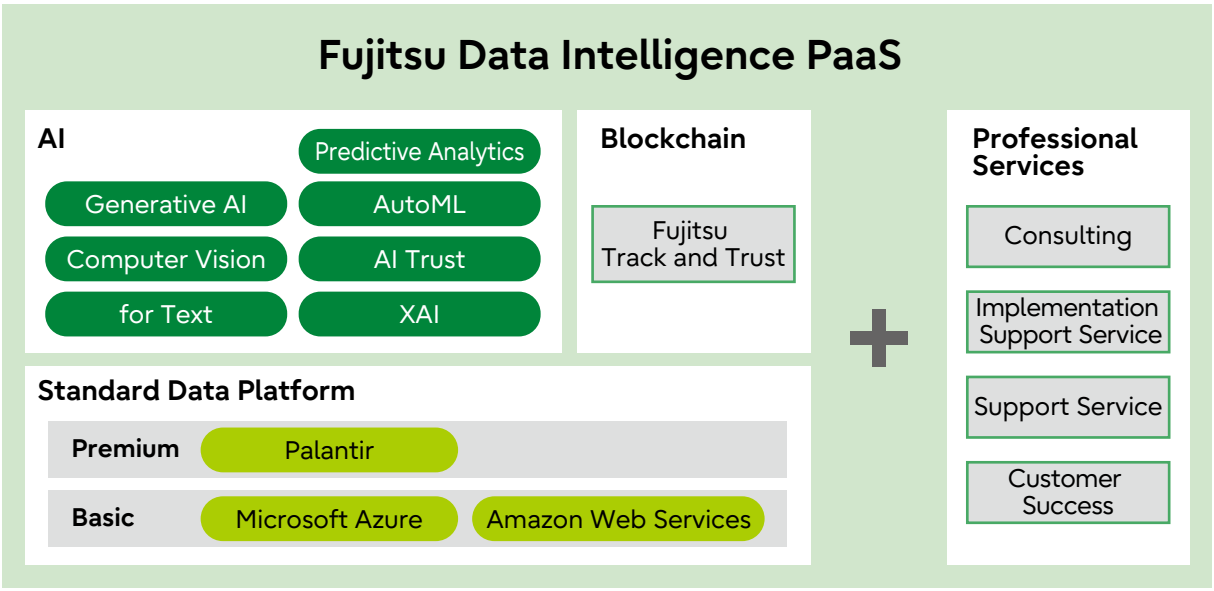
Fujitsu's practical approach to solving the tariff puzzle

To solve the "Tariff Puzzle" in an era of uncertainty, integrating data and AI into supply chain business processes is essential.

Through DI PaaS, an offering of the "Fujitsu Uvance" business model, Fujitsu provides solutions that help build supply chains adaptable to the rapidly changing global trade policies.

DI PaaS is a cloud-based, all-in-one operations platform that integrates vast amounts of data scattered both inside and outside an organization into a logical format to support decision-making (Figure 3).

Figure 3: Elements Composing DI PaaS



(Source) Created by Fujitsu.

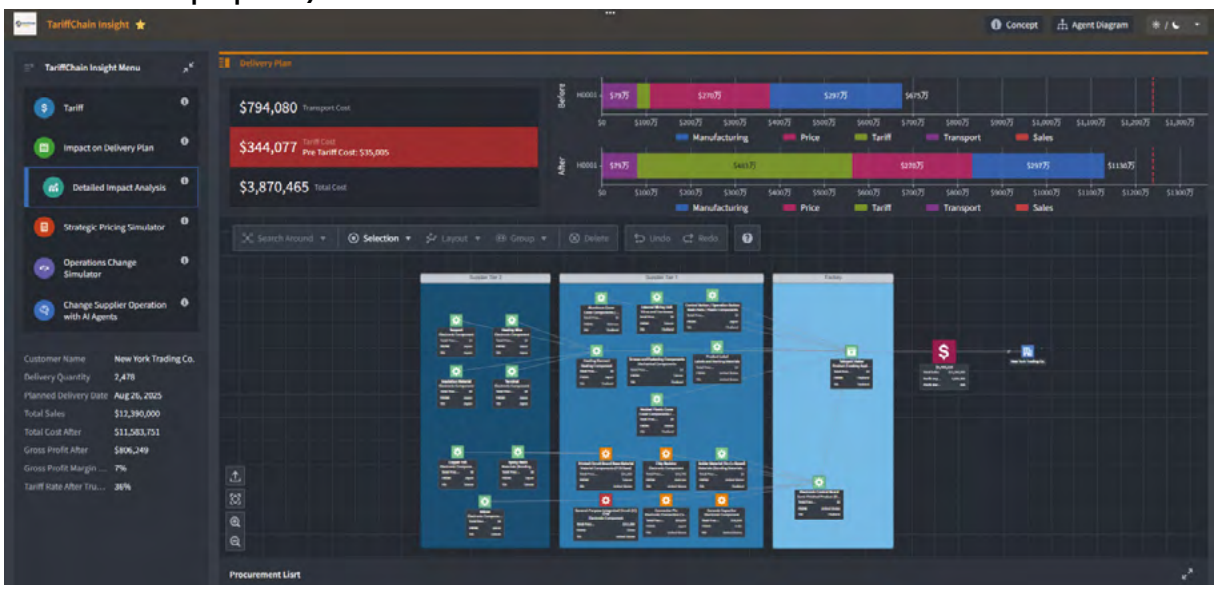
DI PaaS's data integration capabilities reduce impact analyses that traditionally took weeks to just a few days. Furthermore, AI agents facilitate simulation-based decision-making by proposing countermeasures. By integrating data integration technology with AI technology, the platform supports enhanced supply chain resilience and optimal decision-making through three practical approaches: "Profit and Cost Structure Analysis," "Strategic Pricing Simulator," and "Operational Change Simulator."

Profit and cost structure analysis

This feature visualizes on a map which products, through which routes, are incurring what tariff rates within a company's supply chain. It identifies suppliers and factories affected by changes in tariff rates on the map and centrally manages and displays the total costs and profits when using the current supply chain.

It also enables real-time understanding of how much tariff rates have changed, showing costs before and after changes, and simultaneously indicating the degree of impact on each product's delivery plan. This allows for a visual representation of which parts of the entire supply chain are most affected (Figure 4).

Figure 4: Unified Management and Visualization of Tariff Impacts on the Supply Chain (Image is for illustration purposes)



Updates to tariff rates are promptly reflected in the system through collaboration with companies that collect and publish global tariff data. In urgent cases, manual input is also possible. Fujitsu is currently exploring adding a feature that would allow AI to automatically update tariff rate changes worldwide in near real-time.

Without a mechanism to integrate and visualize the entire supply chain, from raw material procurement to manufacturing and sales, subsequent steps such as setting optimal sales prices or securing alternative routes cannot be effectively managed. Data is paramount. DI PaaS's strength lies in its ability to securely integrate and store vast amounts of structured and unstructured data scattered across and outside an organization, thereby building a high-speed data analysis platform while ensuring data governance.

Mr. Tomoyuki Yamada, Senior Manager of Fujitsu's AI Strategy and Business Development Unit points out, “Many companies likely face common challenges such as poor data accuracy or insufficient data.” He adds, “We will propose solutions that complement missing data, leveraging Fujitsu's practical knowledge of data processes for each company's specific challenges.” In a trial with a certain manufacturer, Fujitsu proposed the utilization of a data platform including business partners and collaboration with overseas companies handling inter-company transaction data, paving the way for problem-solving.

Strategic pricing simulator

This feature analyzes how changes in raw material or component procurement costs impact demand when passed on to product prices, using a price elasticity model. By setting minimum and maximum prices based on the gross profit margin, it hypothesizes and verifies the optimal price range within those bounds. Furthermore, it allows for the comparison of various scenarios, such as “worst-case” or “moderate-case,” by altering tariff rates. These functionalities support the formulation of optimal pricing strategies in response to market changes.

To determine optimal sales prices, it is necessary to comprehensively consider not only changes in tariff rates but also exchange rates, inventory, and long-term contracts. Relevant data can be linked for inventory and contracts. Mr. Yamada notes that Fujitsu will “decide on future responses based on customer needs” regarding exchange rate trends and changes in trade regulations like safeguards.

As the volatility of trade policies increases, rigid pricing strategies reliant on human experience and intuition cannot maintain or enhance competitive advantage. Embracing and implementing flexible pricing strategies based on objective data is what attracts competitive advantage in an era of uncertainty.

Operational change simulator

It is possible that the results of sales price simulations may indicate that maximizing profits is not achievable with the existing supply chain. In such cases, evaluating the impact of operational changes becomes necessary, including selecting alternative suppliers, ensuring quality when changing suppliers, securing alternative transportation routes, and conducting legal checks in each country/region.

The new solution displays alternative options on a map when a supplier heavily affected by tariffs is selected. When an alternative is chosen, its quality and tariff rates are shown, and the impact of the change is evaluated (Figure 5). Furthermore, specialized AI agents for each domain—such as cost, transportation routes, quality/risk, and legal—provide optimal assessments from their respective perspectives. Based on these evaluations, an orchestrator agent ultimately proposes optimal countermeasures, such as "changing pricing strategy," "switching suppliers," or "changing production bases" (Figure 6).

Figure 5: Comparison of impact between alternative and existing suppliers (Image is for illustration purposes)

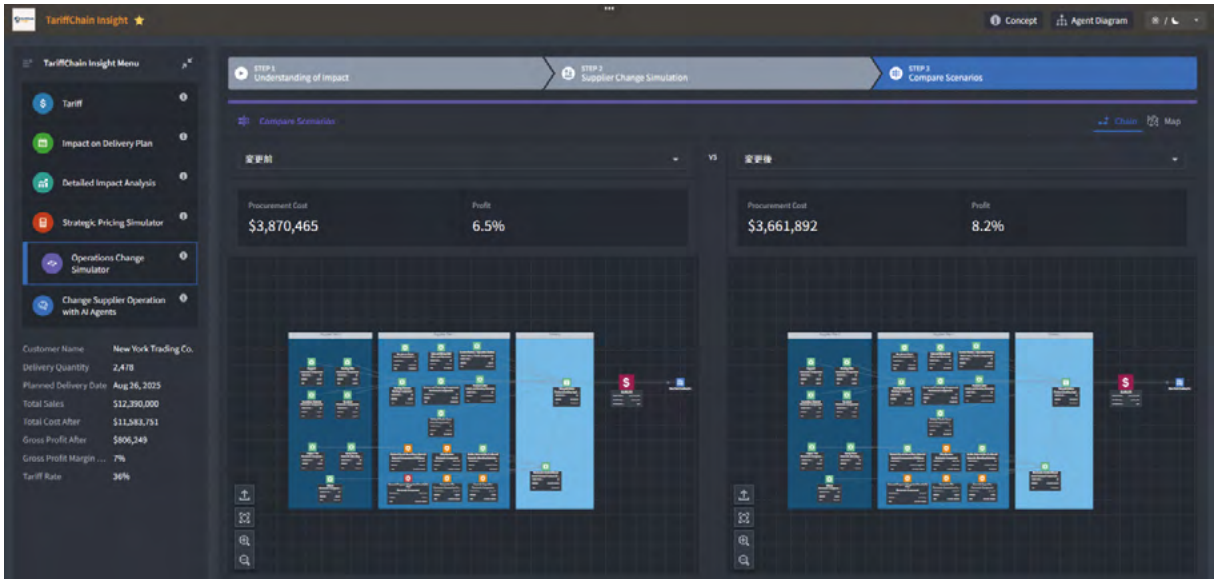
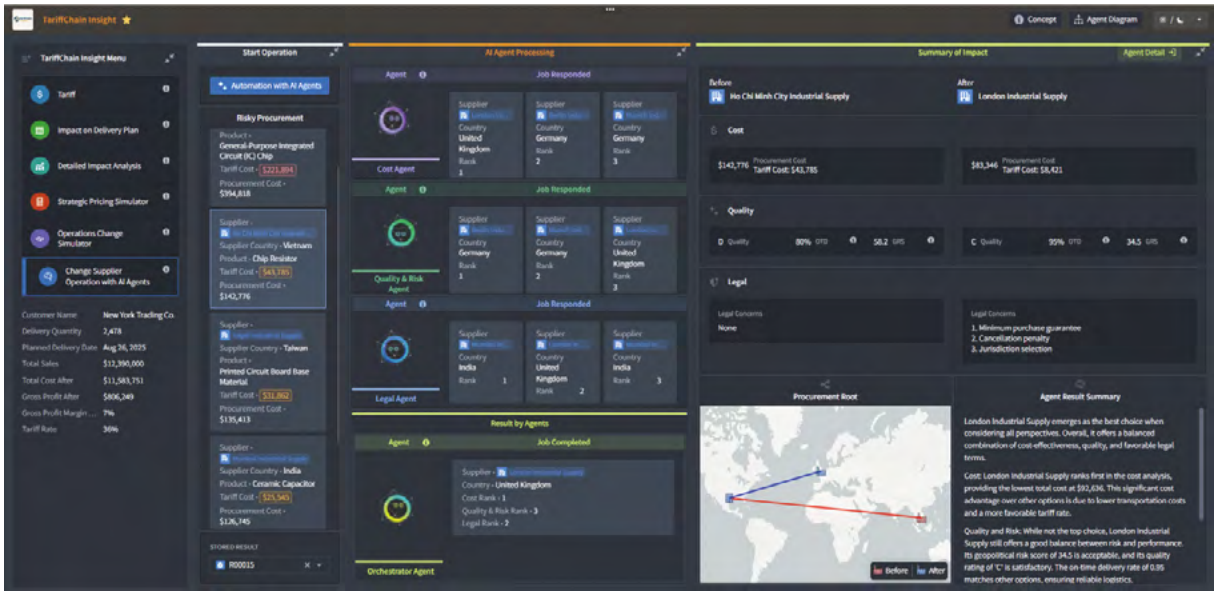


Figure 6: Specialized AI agents in each domain provide optimal assessments (Image is for illustration purposes)



To enhance the expertise of AI agents, each agent is trained on operational manuals. By refining data quality, increasing data volume, and providing constructive feedback on AI-generated suggestions, the agents autonomously broaden and deepen the foundations of their decision-making, leading to increasingly precise and valuable proposals. Shifting from “human-centric” choices to “AI-human collaboration” supports objective, precise, and rapid impact analysis and optimal decision-making.

Diversifying risk preparedness and increasing tolerance

To maximize AI's capabilities, it is, needless to say, essential to vigorously promote data collection and integration. Beyond connecting a company's own scattered data, it is crucial to automatically detect and combine structured open data such as market conditions, customs statistics, and tariff rates, as well as unstructured open data like SNS and press releases (while ensuring reliability). This allows for the visualization of the entire supply chain with high-quality and abundant data.

Furthermore, connecting the collected and integrated data with digital twin technology through AI is also a crucial aspect. By robustly preparing for risks and opportunities on a digital twin, the possibility of achieving both “increased risk tolerance” and “acquisition of growth opportunities” in real business can be further enhanced. Building a data and AI-driven supply chain is the most critical management agenda in an era of uncertainty. Promptly establishing such a system will be a vital step in further solidifying competitive advantage in the market.

Section 4

Conclusion

What is needed to leverage data and AI in business is not exploration, but practical application. Merely incorporating data and AI into a part of your company's business processes will only be a symptomatic treatment, making it difficult to achieve desired results. The key is to simultaneously advance business transformation to fully utilize data and AI.

This requires not only the introduction of technology but also transformations in various areas such as business processes, human resource development, organizational culture, and collaboration with suppliers and industry associations. It is crucial to identify your company's challenges, prioritize them accordingly, and undertake transformations with clear deadlines. Evolving into a company that embraces transformation is what truly refines the value of a data and AI-driven supply chain.

Profile

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Daisuke Suzuki joined Fujitsu in March 2024, following roles at Nikkei Inc. and PwC Japan. At Nikkei Inc., he spent approximately 18 years as a staff writer and editor, covering policy at central government agencies such as the Ministry of Finance, Financial Services Agency, and Ministry of Economy, Trade and Industry, as well as industries including energy and startups. At PwC Japan, he led the planning, editing, and writing of Thought Leadership content as a Manager. He assumed his current position in April 2025.

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