NEW TECHNOLOGY NEEDS TRIGGERED BY THE TRUMP SHOCK
— TARIFF POLICY DRIVING US COMPANIES TO IMPROVE PRODUCTIVITY —

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SUMMARY

- Rising cost burdens on US companies due to the Trump tariffs are a concern. Many micro, small, and medium-sized enterprises (MSMEs) in the US lack the ability to change their supply chains in the present state by relocating operations overseas or revising pricing, and may be forced to absorb the additional expenses internally.
- To address the growing cost burden, it is urgent for companies to pursue further improvements in productivity, implement systems that enable real-time tracking of cargo and selection of optimal routes within increasingly unstable global supply chains, and introduce tools to predict and manage risks such as delays.
- Effective use of advanced technologies may help minimize tariff-related risks and fundamentally rebuild competitiveness.

1. THE TRUMP ADMINISTRATION'S TARIFF POLICY AND ITS IMPACT

1-1. BACKGROUND AND ECONOMIC IMPACT OF TARIFF POLICY

The Trump administration has implemented a comprehensive tariff policy aimed at preventing the offshoring of the US manufacturing base, eliminating tariff and non-tariff barriers imposed by trading partners, and reducing the trade deficit. While the policy is intended to revive US manufacturing and correct trade imbalances, it is also said to have a significantly negative impact on the US economy. According to the US Senate Committee on Small Business & Entrepreneurship, the Trump tariffs are projected to reduce US GDP by USD 180 billion annually over the next ten years[1].

1.2 POTENTIAL IMPACT ON US MSMES

This suggests that the tariff policy may lead to outcomes contrary to those intended. For companies that rely on parts and raw materials imported from abroad, the Trump tariffs are likely to raise costs and significantly affect the cost structure of the entire supply chain. As a result, businesses are being pressed to reorganize their supply chains and reassess their production bases in response to the policy. Large corporations are often able to adjust their global operations in search of regions with lower tariffs. However, MSMEs lack the power to pass on costs and have limited options, such as relocating operations or changing suppliers, and are left with no choice but to

[1] DB068FE37D91B435A2A5129F16312542E67F495E3EE68150167EF9FCC14ADE1A.the-trump-tariffs-a-small-business-crisis.pdf (Accessed July 11, 2025)

absorb the increased costs directly. To mitigate these impacts, the introduction of new technologies and the development of new business models are crucial.

2. CHALLENGES ARISING FROM THE TRUMP TARIFFS

2-1. RISING COSTS AND GROWING DIFFICULTY OF DEMAND FORECASTING IN MANUFACTURING

In the manufacturing sector, tariffs are expected to increase the procurement cost of raw materials and components, raising concerns about a decline in competitiveness. For companies that rely heavily on imports, tariffs directly drive up prices. As many cannot pass these costs on to customers, profit margins are squeezed. The impact is especially severe in industries such as automotive and electronics, which are deeply integrated into complex global supply chains. Changing component suppliers involves significant time and cost due to the need to revise quality control systems and establish new supplier relationships, making short-term adjustments difficult. In addition, the economic shock caused by the tariff policy is likely to reduce overall demand. However, because the policy environment remains fluid, companies face difficulties in forecasting demand, which may lower forecasting accuracy.

2-2. LOW PRODUCTIVITY AND FINANCIAL VULNERABILITY OF MSMES

MSMEs tend to have low productivity to begin with, and rising procurement costs for raw materials and components further strain their financial condition. As a result, it becomes even more difficult for them to invest in equipment and human resources to respond to the expected deterioration in the business environment.

2-3. SUPPLY CHAIN INSTABILITY AND RISK MANAGEMENT

The tariff policy has made global supply chains more unstable, making it critical to track cargo in real time and detect risks as they arise. However, many MSMEs still rely on outdated supply chain management systems and struggle to respond quickly to new developments. In order to cope with sudden external changes, such as the recent tariff policy, proactive risk management and timely action are required. Yet conventional supply chain management often involves delays in information flow and relies on a reactive approach, addressing issues only after they occur.

Figure 1: Key challenges posed by the Trump tariffs

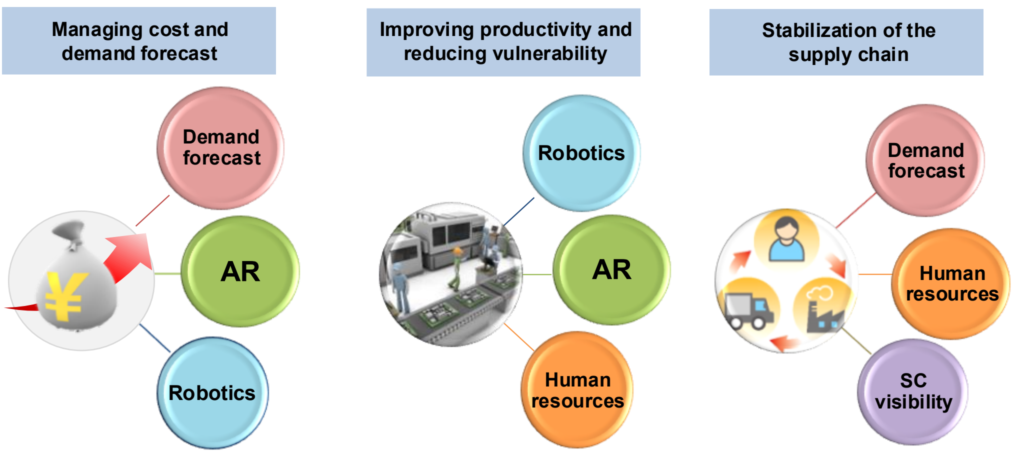
Rising costs Growing difficulty of demand forecasting	• In manufacturing, tariffs have raised raw material and component costs, making it hard to pass them on and reducing profit margins." • In automotive and electronics, changing suppliers entails quality control and relationship burdens, making short-term adjustments difficult. • Economic shocks caused by tariff policy make demand forecasting difficult.
Low productivity Weak financial foundation	• MSMEs have inherently low productivity, and rising raw material costs further strain their finances. • As a result, financially weak MSMEs struggle to invest in equipment and personnel amid a deteriorating business environment.
Supply chain instability	• Many MSMEs use outdated supply chains and cannot respond quickly to new developments. • Conventional supply chain management transmits information slowly and reacts only after problems occur.

Source: Created by MGSSI

3. REQUIRED TECHNOLOGIES

Based on the above, this section outlines the technological solutions needed to address each of the identified challenges, along with specific examples of companies providing those solutions.

Figure 2: Solutions to the challenges



Source: Created by MGSSI

3-1. IMPROVING DEMAND FORECAST ACCURACY WITH AI AND MACHINE LEARNING

Enhancing the accuracy of demand forecasting is a key factor in responding to market fluctuations caused by tariff policy. Improved forecasting enables appropriate pricing, lower raw material costs, and better cash flow through optimized inventory management.

■ **Case 1:** PredictHQ (US)

PredictHQ provides solutions that significantly improve demand forecasting accuracy by leveraging AI and machine learning. In particular, the company supports retailers and manufacturers by analyzing real-time event data and past consumption patterns to forecast tariff policy and market fluctuations, thereby enabling effective inventory management and production planning. With this technology, companies can proactively respond to tariff impacts by adjusting production and pricing in a timely manner.

■ **Case 2:** Vizen Analytics (US)

Vizen Analytics provides autonomous forecasting software that accounts for supply chain disruptions and supports the development of production plans that factor in the potential impact of tariffs in advance. The company's AI-driven forecasting system accurately predicts demand fluctuations within complex supply chains. By maximizing forecasting accuracy in areas such as future demand, production planning, and supplier lead times and fulfillment, and thereby optimizing inventory management, it helps ensure the continuous operations of consumer goods manufacturers and distributors.

3-2. ENHANCING MANUFACTURING EFFICIENCY THROUGH AR AND DIGITAL TWINS[2]

Improving operational efficiency on the factory floor and strengthening quality control are critical components in offsetting increasing tariff-related costs. Manufacturers are prioritizing investment in digital data infrastructure to address chronic labor shortages and low productivity. At the same time, there is a growing need for highly skilled personnel capable of responding to supply chain disruptions caused by tariff policy.

■ **Case 1:** AMA XpertEye (France)

AMA XpertEye uses AR technology to improve operational efficiency on manufacturing floors. The company offers a system primarily for MSMEs in which workers wear AR glasses and receive real-time support from technicians. This enables remote technical support, reduces time lags in parts procurement, and contributes to cost reductions.

3-3. TRANSFORMING PRODUCTION LINES WITH ROBOTICS AND COLLABORATIVE ROBOTS (COBOTS)

Robotics technology that enables both labor cost reduction and improved product quality serves as a key enabler in countering rising costs caused by tariffs.

■ **Case 1:** Rethink Robotics (US)

Rethink Robotics provides low-cost, easy-to-program robots designed for MSMEs. These robots support the automation of production lines, reduce manual errors, and increase manufacturing speed. By both reducing labor costs and improving product quality in the production of goods and components, they help businesses better absorb rising tariff-related costs.

■ **Case 2:** Universal Robots (Denmark)

Universal Robots offers collaborative robots (cobots) that are easier to install and more affordable than traditional industrial robots, making them accessible to MSMEs. These robots can perform a wide range of tasks, including assembly, packaging, and quality inspection, and can also work safely alongside human operators. They provide flexible automation solutions in response to labor cost pressures from tariffs. For example,

[2] A digital twin is a technology that collects data from the physical world through IoT and other means, then uses that data to reproduce the physical environment in a virtual space (see the SoftBank Business Blog).

Creating Revolutions, a company in Miami, used these to reduce its defect rate from double digits to under 1% and increase production efficiency by approximately five times[3].

3-4. SUPPLY CHAIN VISIBILITY AND RISK MANAGEMENT SYSTEMS

To respond to the uncertainty caused by tariff policy, it is essential to achieve end-to-end visibility across the supply chain and detect risks in real time.

■ **Case 1:** FourKites (US)

FourKites provides solutions for supply chain visibility. Through real-time cargo tracking and predictive analytics, the company enhances transparency across the supply chain, forecasts the impact of tariff and trade policy changes, and proposes appropriate countermeasures in advance.

■ **Case 2:** E2open (US)

E2open offers an end-to-end supply chain management platform that spans demand sensing, procurement, manufacturing, and logistics. Through AI-driven decision support, it automatically generates scenario analyses and optimization proposals in response to tariff changes, enabling MSMEs to achieve enterprise-level supply chain management.

3-5. HUMAN RESOURCE MATCHING AND WORKFORCE OPTIMIZATION

To adapt to changes in the business environment caused by tariffs, optimal placement of personnel and improvements in productivity are key to success.

■ **Case 1:** Pymetrics (US)

Pymetrics offers an AI-powered human resource matching platform. To improve productivity, the platform enables companies to reassign high-skilled personnel quickly and flexibly. This helps companies optimize their workforce and respond to fluctuations in tariffs and production.

■ **Case 2:** Workday (US)

Workday provides a human resources management platform that uses AI-driven talent analytics to identify skill gaps and recommend optimal training programs. In response to structural changes in business caused by tariff policy, the platform helps streamline the development and deployment of personnel with the necessary skills, thereby enhancing adaptability to change.

4. THE NECESSITY OF TURNING EXTERNAL SHOCKS INTO OPPORTUNITIES

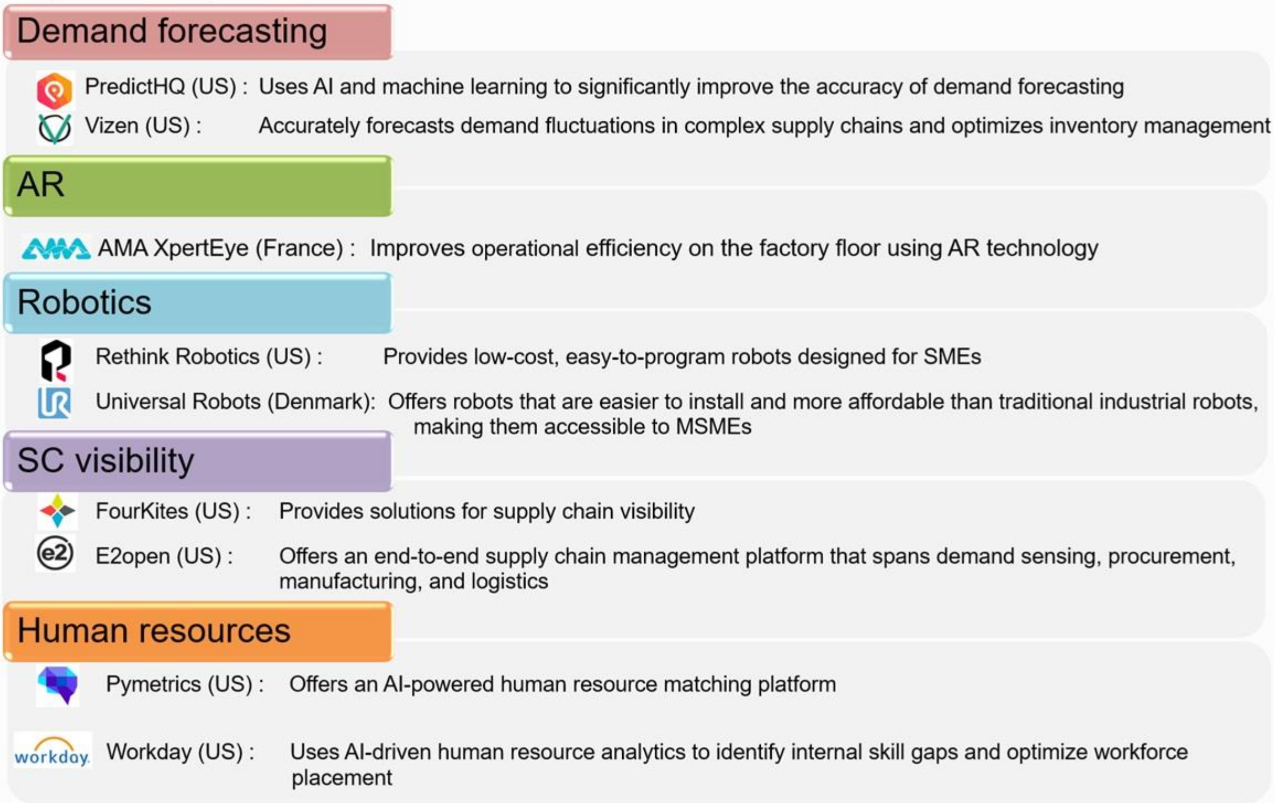
While the direction of the Trump administration's tariff policy remains fluid, the scale of its impact calls for companies to move beyond simple cost-cutting and fundamentally rebuild their competitiveness. To that end, raising awareness of the importance of technology investment is crucial. The advanced technologies outlined above can enhance demand forecasting accuracy, optimize production lines, and improve inventory management, thereby helping to minimize the negative effects of tariff policy. Leveraging technology is not merely a means of reducing costs but a vital element in strengthening competitiveness.

Responding to tariff policy requires more than simply introducing individual technologies. By integrating initiatives such as automating production lines, building flexible manufacturing systems, and streamlining supply chains, MSMEs can deliver higher-quality products to market more quickly. Digital transformation must go

[3] https://www.universal-robots.com/ja/case-stories/creating-revolutions/ (Accessed July 11, 2025)

beyond technology adoption to encompass the redesign of organizational workflows, the upskilling of employees, and the establishment of data-driven decision-making frameworks. Together, these efforts can strengthen organizational resilience to external shocks. Turning the disruption caused by tariff policy into an opportunity to become a more competitive enterprise will pave the way for future success.

Figure 3: Major solution providers



Source: Created by MGSSI based on materials from each company