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Director
U.S. National Science Foundation
2415 Eisenhower Ave.
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Re: "Request for Information on the Development of an Artificial Intelligence (AI) Action Plan" (90 Fed. Reg. 9088, Feb. 6, 2025)

Dear Mr. Kratsios and Mr. Panchanathan,

The National Association of Wholesaler-Distributors ("NAW") respectfully submit these comments in response to the Networking and Information Technology Research and Development (NITRD) National Coordination Office's Request for Information on the development of an artificial intelligence (AI) action plan. This document is approved for public dissemination. The document contains no business-proprietary or confidential information. Document contents may be reused by the government in developing the AI Action Plan and associated documents without attribution.

About NAW and the Wholesale Distribution Industry

As the "national voice of wholesale distribution", NAW is an association comprised of employers of all sizes and national, regional, state, and local line-of-trade associations spanning the $8 trillion wholesale distribution industry that employs over 6 million workers in the United States. In total, NAW represents an industry comprised of 19 sectors with 250,000 places of business in all 50 states and the District of Columbia.

Wholesale distribution is a business-to-business industry: wholesaler-distributors purchase inventory, generally from manufacturers, and sell it to their customers, generally retailers or professional installers. Wholesaler-distributors buy inventory in large quantities, warehouse it, break it down into the quantities their customers want (called "breaking bulk"), and ship to those customers. Distinct from warehouse logistics companies, which move someone else's product from seller to buyer, wholesaler-distributors purchase inventory, take title to it, then re-sell it to customers.

Most wholesaler-distributors are small- to mid-sized private companies, and, except for the largest companies, few have recognized name brands like the manufacturers and retailers which are supply chain partners. The role of the wholesale distribution industry in the economy is often underestimated, but the industry contributes approximately one-third of U.S. gross domestic product and is essential to our economic supply chain.

Artificial Intelligence and the Wholesale Distribution Industry

As a critical part of the supply chain, the wholesale distribution industry consistently leverages new, developing technologies to improve the efficiency of our services in supplying goods throughout the country and internationally. Today's wholesaler-distributors are integrating artificial intelligence (AI), automation, and machine learning into their daily operations.

NAW's comments provide an overview of how the industry uses this technology in nearly every facet of the business, such as inventory management, purchasing, order fulfillment, sales and marketing, and customer service. The comments also provide recommendations on how a federal AI Action Plan could support wholesaler-distributors and the larger U.S. economy.

Application and Use of Artificial Intelligence

Inventory Management

The process of tracking and maintaining the entire stock of goods a wholesaler-distributor holds in its warehouse(s) is one of the most tedious, complex aspects of running a successful operation. A distributor will often carry thousands of stock keeping units (SKUs) and some of the larger companies stock several million separate products. As such, the industry is always in search of innovative, cost-effective tools to protect against inaccurate counts, lost inventory, overstock or shortages.

The emergence and availability of AI help solve many of these challenges and provide wholesaler-distributors with new, efficient-achieving capabilities. For example, AI technology allows companies to analyze sales patterns and inventory turnover rates to optimize stock levels across different locations. These AI tools can collect data from sensors and connected devices, analyze usage patterns, and forecast demand to optimize stock levels. In doing so, this technology also reduces excess inventory and ensures critical supplies are available when needed, improving overall supply chain efficiency.

This technology has also been leveraged to improve preventative maintenance for tools and machinery critical to inventory management. For example, the integration of AI systems into existing equipment can predict when equipment such as forklifts and conveyor belts are slowing down, prior to an actual breakdown. With this information, wholesaler-distributors can better account for timely maintenance, reduce machine downtime and ensure smooth operations of distribution centers.

Purchasing

Unlike retailers and online marketplaces, wholesaler-distributors purchase and own all of the goods and products they sell from their warehouses and distribution centers. Given the importance and inherent risk of this process, a thorough and efficient purchasing process is crucial for the industry. Similar to the adoption of web platforms and email correspondence towards the end of the 20th century, wholesaler-distributors have begun to implement AI technology to enhance today's purchasing operations.

In leveraging AI, wholesaler-distributors can incorporate their historic sales data with predictive analytics to identify purchasing patterns and trends. This enables purchasers to make more informed decisions about stock replenishment and supplier selection, smoothing out supply chain disruptions and transportation bottlenecks. Wholesaler-distributors also employ predictive analytics to forecast demand, which provides an additional data point to help optimize inventory levels.

Wholesaler-distributors have also deployed advanced machine learning models and other AI tools to enhance their inventory planning and purchasing. These models help businesses optimize product depth and availability across various markets. In turn, wholesaler-distributors are equipped with a better understanding of supply chains and improved service levels and operational efficiency.

Industry leaders have also partnered with and invested in AI technology firms to enhance their businesses and, in many cases, their purchasing operations. In one such partnership, tools were implemented to improve demand forecasting and supplier decision-making by providing deeper insights into procurement patterns, inventory needs, and market risks. By integrating AI-driven forecasting, wholesaler-distributors can work to optimize procurement efficiency and minimize supply chain disruptions.

AI has also allowed companies to automate routine purchasing tasks such as order processing and correspondence with suppliers. Deploying technology in this manner reduces manual errors and frees up staff for more strategic activities. By processing purchases in a more efficient and less error-prone manner, wholesaler-distributors have been able to redirect resources to benefit their workforce and the growth of their business.

Order Fulfillment

Alongside the efficient purchasing of goods from manufacturers, the timely fulfillment of customer orders is critical to our businesses' operations. Much of this work has historically been manual with assistance from tools such as forklifts and order management systems. Now, the industry can leverage AI, automation, and other technologies to improve their order fulfillment systems.

For example, automated order processing and AI-driven order optimization tools are two notable enhancements of order fulfillment operations. Automated order processing is a method in which AI systems automate the creation of orders from emails, PDFs or other online documentation without user intervention. This significantly reduces the amount of time needed to configure orders into formats ready for fulfillment, allowing employees to focus on more strategic tasks.

The wholesale-distribution industry has also used AI systems to optimize their inventory and fulfillment by identifying the closest substitute for a stock-out or back-ordered item. This involves the predictive analysis of past vendor performance and trends in pricing and delivery which would be virtually impossible without the availability of AI.

To this end, some distributors have implemented their own AI-powered tools to enhance their order fulfillment process. For example, one industry leader deployed an internal chatbot that helps employees quickly retrieve product information, check inventory levels, and assist with sourcing alternative items when needed. By leveraging AI in this manner, companies can reduce manual workloads, optimize procurement, and improve response times for customer orders.

Sales and Marketing

Although the image most consumers have of the wholesale distribution industry is a vast warehouse or distribution center, the work of sales and marketing teams play an essential role. Made up of both in-house and outside representatives, these teams are tasked with identifying potential customers, establishing strong relationships with current customers, and creating and broadcasting communications that highlight business offerings to the communities they service. As technology evolves, these teams continue to adopt new strategies and techniques to best achieve their mission to attract new business and retain existing business.

The practice of price optimization has seen major improvements with the emergence of AI. By using historical data and analytics, sales representatives can customize pricing to meet the demand of specific, existing customers. AI can also analyze buying patterns, margin changes, and cart behavior of their existing customers to make highly segmented pricing recommendations that are likely to influence customer decision making.

For example, wholesaler-distributors have implemented AI-powered pricing platforms to improve their sales process by centralizing and automating pricing data. These systems process billions of pricing values in real time, ensuring accuracy and consistency across multiple channels. By unifying pricing across multiple systems, pricing can be dynamically adjusted based on customer agreements, market conditions, and business rules, allowing sales teams to respond quickly with optimized prices.

Partnering with digital ordering platform developers, companies have also utilized AI-powered platforms to enable customers to create digital storefronts. With this technology, customers have more opportunities to streamline how they place orders and discover new products. This

advancement has helped enhance efficiency, drive business growth and digitalized a sector that has historically been slower to innovate.

To help advertise, marketing teams have employed strategies such as personalized marketing and content creation powered by generative AI. Although marketers have always been able to tailor their messaging to a specific audience, AI has provided the tools for these teams to deliver personalized marketing experiences unique to each customer. To do so, AI systems can analyze customer data to recommend products and promotions tailored to individual preferences. This approach aims to increase customer satisfaction and brand loyalty.

Large language models (LLMs) and AI image generators are another new tool that marketing teams use to promote their company. Now, wholesaler-distributors can leverage these generative AI resources to assist in creating personalized marketing content, such as product descriptions and promotional materials. In turn, these tools help to streamline the content creation process, and can result in a more personalized experience for new, existing and future customers.

Customer Service

The wholesale distribution industry prides itself on delivering exceptional service with the goal of creating a family of customers for life. Historically, businesses have made significant investments in physical and human infrastructure to achieve this mission. Advancements in AI, such as data analytics and chatbots, have provided new tools to improve customer experience while easing mundane, repetitive tasks for companies and their employees.

To avoid the hours' worth of analyzing data, AI has the capability to quickly provide employees with an overview of an individual customer. In doing so, these tools can provide customer service representatives with actionable insights into customer behavior, helping them identify at-risk accounts and recommend targeted actions to retain customers. In the case of a customer service call center, this technology can elevate customer relationship management (CRM) software to equip representatives with a host of information on a customer and provide helpful context for the questions or assistance they may be seeking.

For questions or tasks that may be more generic and frequent, the wholesale distribution industry has started to deploy LLMs and AI-driven voice agents. These tools can provide immediate responses to inquiries 24/7, and drastically reduce wait times and enhance customer experience.

In leveraging this technology, some wholesaler-distributors have integrated AI-driven voice agents to streamline their customer service operations. These AI tools automate procedural calls historically made by human representatives, significantly reducing customer wait times. The technology also minimizes delays, decreases reliance on seasonal staffing, and improves accuracy in verifying patient benefits. This automation allows staff to focus on more complex support tasks, enhancing overall service efficiency.

AI Action Plan Recommendations that Support the Wholesale Distribution Industry

To ensure that the industry can continue to leverage AI in the manner described above and explore additional uses to benefit its employees and customers in the future, the federal government should prioritize the following in its action plan:

Secure Opportunities for Further Innovation

The wholesale-distribution industry has only been able to deploy the AI tools available because of the pro-innovation environment that empowered entrepreneurs and visionaries to develop this technology. To ensure the industry can continue to benefit from future innovation, the federal government should:

- **Regulate in a manner that promotes the future growth of AI.** When establishing new guardrails, the federal government must give companies the flexibility to deploy new AI-driven tools without burdensome compliance requirements. Agencies should also avoid overregulation that would make it cost prohibitive for wholesaler-distributors to install new technology.
- **Promote tax incentives that reward research and development.** For decades, research and development (R&D) expenses have qualified for immediate federal tax deduction for businesses. However, effective January 2022, businesses must amortize or deduct R&D costs over five years under Section 174 of the tax code, increasing the cost of new investments and raising taxes. Congress should reintroduce and pass legislation to repeal Section 174 R&D amortization and make it easier for companies to deduct these expenses.
- **Combat dangerous uses that tarnish the benefits AI can provide.** Federal laws and regulations should clearly prohibit and punish AI use for illicit and illegal activities. Mistrust in AI is a major hurdle to its adoption and clear parameters around prohibited uses would help both individuals and companies feel more comfortable with its usage.

Cultivate Public-Private Collaboration

Although government should allow the private sector space to innovate and grow, it can be an important partner to help fund and develop new technologies. It is also crucial that private sector developers and users have a seat at the table when AI-related regulations are being developed. As such, a successful AI Action Plan would encourage the federal government to:

- **Include developers and users to participate on AI task forces and advisory boards.** Both private sector developers and users have valuable, unique perspectives on the realities of AI use that federal stakeholders may lack. Both developers and users should have a consistent presence in these conversations at the federal level, serving as members of any task forces or boards that may be considering AI use. As influential adopters of AI tools, wholesaler-distributors should especially be consulted on issues

related to AI and data privacy, cybersecurity, supply chain management, and small business implications.

- **Engage in meaningful consultation with private sector stakeholders when developing AI guidance and regulations.** Consistent public-private collaboration will be key to the successful growth of AI, particularly during the federal rulemaking process. Federal agencies should ensure stakeholders, such as private sector AI developers and users, have ample time to provide robust information and feedback during the rulemaking process and in the development of any federal guidance. Regulators should also reach out to these stakeholders to solicit feedback directly when appropriate.

Protect Data Privacy and Security

A major barrier for the wholesale distribution industry to adopt AI is the fear around data privacy and security. In today's digital world, companies hold an abundance of valuable, proprietary data that may provide them with advantages over their competitors. To ease these concerns and promote the use of AI tools more broadly, the federal government should:

- **Identify privacy rights of customers and businesses using AI.** The creation of a federal data privacy policy would make it clearer for customers and businesses to understand the national legal parameters required when utilizing AI. One, national standard would also establish much-needed legal consistency critical for wholesaler-distributors with operations across states to continue to leverage this technology. Specifically, companies would support legislation and regulations with the flexibility to use their collected data to enhance their business while protecting the rights and privacy of its customers.
- **Address areas of ambiguity on the ownership rights of AI-produced resources.** Similar to federal privacy rights, federal stakeholders should also resolve the uncertainty AI users have with ownership rights of the tools and resources they use. Such legislation or regulations should provide companies with reassurance that their data is secure and any generated outputs are owned by the user, not an external product developer.

Enhance Critical Supply Chain Efficiency

Recent labor disruptions, natural disasters, and the COVID-19 pandemic have amplified the fragility of our nation's supply chains. As such, the wholesale distribution industry has invested significant resources to map, monitor, and make our supply chains more resilient. Our industry also understands the opportunity AI provides to continue to improve these efforts, and requests that an AI Action Plan direct federal agencies to:

- **Examine the use of AI for supply chain mapping and monitoring.** Federal entities, such as the Department of Commerce's Supply Chain Center, should leverage AI tools in its efforts to map and monitor critical supply chains. Resources should also be made publicly available to businesses, such as wholesaler-distributors, on how they can leverage AI to better understand their supply chains.

- **Understand the role of supply chain stakeholders in building AI infrastructure.** The wholesale distribution industry has a major role to play in the construction of data centers needed to power the growth of AI. As such, federal agencies of jurisdiction, like the Department of Commerce and National Telecommunications and Information Administration (NTIA), should consult with companies to better understand the needs of our industry to support these efforts.

Promote Workforce Development

AI allows employers to upskill workers and create well-paid, safe jobs. The introduction of AI into the industry has created a demand for upskilling and workforce development. To aid these efforts, the federal government should:

- **Establish tax incentives to promote upskilling.** Currently, employers can deduct or access tax credits for investments in worker education and training. The Federal Government should preserve these tax benefits, such as the Lifetime Learning Credit, that can help employees gain valuable technical skills. Legislation should also be adopted that would expand the tax credit and cover a broader array of tools and technology, such as computer equipment, software and licensure fees or materials.
- **Provide additional resources to advance upskilling and workforce development efforts.** As technology, including AI, reshapes industries, federal stakeholders should continue to support and modernize workforce initiatives. AI education should be included in upskilling and reskilling efforts to better prepare workers to develop, manage, and use emerging technologies. Investing in these strategies will not only support economic growth but also ensure a resilient and adaptable workforce for the future.

Consider the Impact and Utilization for Small Businesses

In creating regulations and guidance, the federal government has made a concerted effort in ensuring compliance is feasible for small businesses. Such efforts should be no different in the development of an AI Action Plan, as this technology can revolutionize small business operations for the better. To ensure this is the case, the federal government should:

- **Consult with small business AI users to understand compliance abilities for any new regulation.** Federal agencies should ensure that regulations and policies support small businesses by making compliance clear and manageable. Beyond formal analyses, regulators should engage directly with small businesses using or planning to use AI to better understand their challenges and opportunities. Streamlining regulatory processes, particularly for AI-related policies, will help reduce burdens, foster innovation, and enable businesses to remain competitive.
- **Provide resources on the risks and opportunities associated with AI adoption.** Agencies tasked with AI research and regulations, such as the White House Office of Science and Technology Policy (OSTP), the National Institute of Standards and Technology (NIST), and the National Science Foundation (NSF) should create resources

and host programming focused on AI adoption for small businesses. Lack of knowledge or expertise can be a major hurdle for small businesses to use AI, and federal stakeholders should prioritize investments in AI education so companies can understand if and how AI might be beneficial for them.

Conclusion

As outlined, the wholesale distribution industry has been an early adopter of AI technology in the private sector. AI products and tools have helped our businesses drive operational efficiencies, improve customer service, and enhance workforce productivity.

As the industry continues to integrate AI tools in key areas such as inventory management, purchasing, and order fulfillment, it is crucial that federal policies foster an environment conducive to innovation and growth. It is equally important for the federal government to recognize the unique needs of small businesses in the AI landscape. To ensure our labor force is prepared for the age of AI, the federal government should prioritize initiatives that advance workforce development and upskilling. By promoting flexible regulations, encouraging public-private collaboration, and safeguarding data of companies and their customers, the federal government can ensure that our industry and other supply chain partners can harness the full potential of AI to improve operations and strengthen our economy.

We appreciate the opportunity to provide information on the role of AI in wholesale distribution, and welcome the opportunity to continue to engage with OSTP and NSF as it considers the development of an AI Action Plan.

Respectfully submitted,

Brian Wild
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National Association of Wholesaler-Distributors