Response to the National Institute of Standards and Technology's Request for Information on Artificial Intelligence Standards

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I. Introduction

Workday appreciates the opportunity to provide information in response to the National Institute of Standards and Technology's (NIST) request for information to help guide the development of NIST's Plan for Federal Engagement in Artificial Intelligence (AI) Standards.

Workday is a leading provider of enterprise cloud applications for finance and human resources. Founded in 2005, Workday delivers financial management, human capital management, planning, and analytics applications designed for the world's largest companies, educational institutions, and government agencies. Organizations ranging from medium-sized businesses to Fortune 50 enterprises have selected Workday. Workday's applications empower enterprises to process a wide variety of human resources and finance-related transactions, gain new insights into their workforce and financial performance, and manage employee outcomes consistently on a companywide basis.

Within its applications, Workday incorporates machine learning and AI technologies that enable its customers to make more informed decisions and accelerate operations, as well as assist workers with data-driven predictions that lead to better outcomes. Workday believes these technologies have the potential to impact enterprises in the near-term by making operations more efficient. In the longer term, enterprises will be able to reorganize operations around machine learning and AI's unique possibilities.[1] Workday has supported legislation that would ensure policymakers assess the use of machine learning and AI and its potential societal implications and risks, while avoiding measures that could needlessly stifle innovation.[2] Promoting the thoughtful and responsible adoption of AI has been and will continue to remain a fundamental component of Workday's public policy agenda [3][4]

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[1] See *Introducing Workday's AI Maturity Model: The Four Waves of the Intelligent Business,* Workday (Nov 15, 2017), available at https://blogs.workday.com/introducing-workdays-ai-maturity-model-the-four-waves-of-the-intelligent-business/

[2] See *The Future of AI Act -- A Promising Step*, Workday (Dec 14, 2017), available at https://www.linkedin.com/pulse/future-ai-act-promising-step-jim-shaughnessy/

[3] See *Workday's Policy Priorities for 2018*, Workday (Feb. 7, 2018) available at https://blogs.workday.com/workdays-policy-priorities-for-2018/

[4] See *Four Technology Trends That Will Inform the 2019 Policy Agenda (Feb. 25, 2019),* available at https://blogs.workday.com/four-technology-trends-that-will-inform-the-2019-policy-agenda/

Workday is pleased to assist NIST in understanding the current status and plans regarding the development of AI technical standards and tools, the challenges related to the development of AI standards, and the role Federal agencies will play in all of this.

II. Development of AI Technical Standards & Tools

NIST seeks to understand the current "status and plans regarding the availability, use, and development of AI technical standards and tools in support of reliable, robust, and trustworthy systems that use AI technologies."[5] Workday believes machine learning in the enterprise will fundamentally improve the way we work and live. Rather than supplanting humans, Workday believes that predictions derived from machine learning enabled applications inform better decision-making when combined with human judgement. The company recognizes that the success of AI requires development in a "trustworthy manner to ensure reliability, safety, and accuracy" and appreciates NIST's focus on these attributes as fundamental to the evolution of the technology.[6] Toward the goal of trustworthy AI development, Workday's leadership in protecting data privacy and establishing principles for ethical AI are discussed below.

A. Workday's Commitment to Data Privacy

Given that data is the lifeblood of machine learning and AI, these technologies should inherently respect privacy. As we detailed in recent comments provided to NIST on the development of the Institute's *Privacy Framework: An Enterprise Risk Management Tool*, privacy protections have been a fundamental component of Workday's services from the very beginning. Our third-party audit reports and standards certifications provide tangible evidence of how Workday protects its customers' data. When Workday develops new offerings, it implements privacy by design from the very beginning.[7] Workday has received approval from EU privacy regulators for its Binding Corporate Rules and was among the first companies to certify to the EU-U.S. Privacy Shield protecting personal data transferred from the EU. And Workday has built features that enable its customers to comply with the European Union's General Data Protection Regulation. In addition, Workday was the first U.S. company to be certified under the APEC Privacy Recognition for Processors system. As innovative machine learning and AI implementations continue to be developed and deployed, a similarly rigorous approach to privacy should be the goal.

As highlighted in *Workday's Privacy Principles in the Era of Intelligent Technologies*, beyond compliance with privacy laws and regulations, Workday follows three Privacy Principles that include:

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[5] See *Artificial Intelligence,* https://www.nist.gov/topics/artificial-intelligence (last visited May 29, 2019).
[6] See *id.*
[7] See https://www.nist.gov/sites/default/files/documents/2019/02/04/workday_workday.pdf.

1. *Putting Privacy First.* Workday builds controls into its software and services, which enable customers to configure their use of Workday's services to comply with privacy regulations globally and provide appropriate privacy protection for their users.
2. *Innovating Responsibly.* Workday ingrains privacy-by-design principles in every product it builds, every service it deploys, and every new usage of data.
3. *Safeguarding Fairness and Trust.* Workday commits to transparency about how its services use personal data, including those that deploy artificial intelligence, and how it develops and vets products.

Workday believes that strong privacy protections can empower greater innovation and exist in harmony with the data needs of machine learning and AI.[8] In any plan to develop standards and tools related to AI, it is imperative that NIST include a meaningful approach to ensuring data privacy.

B. Workday's Commitment to Ethical AI.

In addition to respecting privacy, machine learning and AI should avoid unintended bias while at the same time not be constrained by inappropriate regulation. Toward that goal, Workday recently published *Workday's Commitment to Ethical AI*, which includes six key principles that guide how Workday responsibly develops machine learning and AI for the enterprise space and works to help address its broader societal impact:

1. *Workday Puts People First.* Workday always respects fundamental human rights. Workday applies machine learning to deliver better business outcomes and help people in their decision-making. Workday's solutions provide customers control over how recommendations are used.
2. *Workday Cares about Society.* Workday believes that humans will always be at the center of work. Workday's focus remains on how AI can align opportunity with talent, and on contributing to the development of a machine learning-ready workforce.
3. *Workday Acts Fairly and Respects the Law.* Workday acts responsibly in its design and delivery of machine learning products and services, and strives to identify, address, and mitigate bias in its AI technologies. Workday aims to ensure that machine learning recommendations are equitable.
4. *Workday is Transparent and Accountable.* Workday explains to its customers how its machine learning technologies work, the benefits they offer, and describes the data needed to power any

[8] See *Workday's Privacy Principles in the Era of Intelligent Technologies* (October 1, 2018), available at https://blogs.workday.com/workdays-privacy-principles-era-intelligent-technologies/

AI solutions it offers. The company demonstrates accountability in intelligent solutions to customers and gives them a wide range of choice in how to deploy them.

5. *Workday Protects Data.* Workday's Privacy Principles apply to all of its products and services, including to its machine learning efforts. Workday minimizes the data used, and embraces good data stewardship and governance processes.
6. *Workday Delivers Enterprise-Ready AI Technologies.* Workday applies its leading quality processes - with input from customers - when developing and releasing machine learning technologies. These machine learning-powered solutions help Workday's customers tackle real world challenges.[9]

Workday is working to build these principles into the fabric of product development and ensure there are processes driving continued compliance with them. As discussed above, Workday has a long history in the privacy space, including incorporating privacy-by-design processes. Similarly, recognizing the life cycles of AI development, Workday is embracing a set of ethics-by-design controls for machine learning and already has in place robust review and approval mechanisms for the release of new technologies. Workday is committed to ongoing reviews of its processes, and evolving them to incorporate new industry best practices and regulatory guidelines. When considering the development of standards and tools related to AI, Workday encourages NIST to consider existing principles and best practices like those fostered by Workday that seek to ensure the responsible development of machine learning and AI technologies.

III. Challenges Related to the Development of AI Standards

NIST seeks to understand the "needs and challenges regarding the existence, availability, use, and development of AI standards and tools."[10] Below are two challenges associated with AI writ large that Workday believes should influence any meaningful discussion of AI standards or tools.

A. Definitional Specificity

The development and use of AI and related technologies has the potential to increase the efficiency and productivity of companies economy-wide while also increasing opportunities for innovation. Unfortunately, there is too often a lack of clarity in defining the term "artificial intelligence" and a lack of distinction between various discrete technologies in the field (e.g. the differences between machine learning, robotics, data analytics, augmented intelligence, and a range of other technologies).

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[9] See *Workday's Commitments to Ethical AI* (May 8, 2019), available at https://blogs.workday.com/workdays-commitments-to-ethical-ai/

[10] See *Artificial Intelligence*, https://www.nist.gov/topics/artificial-intelligence (last visited May 29, 2019).

Different aspects of AI have unique attributes and a range of risks and benefits, so the lack of definitional specificity has the potential to cause unintended consequences in the policy arena. To provide some clarity in this area, Workday released a white paper entitled *Enterprise Intelligence: A New Frontier for Innovation* in 2018. In that paper, working definitions for the following terms were provided: Big Data, Big Data Analytics, AI, Algorithms, Machine Learning, Deep Learning/Neural Networks, and Robotics.[11]

Given the diversity within the technology, a "one size fits all" approach to AI standards and tools development will fall short. Prior to the development of AI-related standards and tools, NIST should focus on disaggregating the broader "AI" term into discrete technologies with meaningful definitional specificity. Workday provided similar input in October 2018 to the Networking and Information Technology Research and Development National Coordination Office in response to their request for information regarding updating the National Artificial Intelligence Research and Development Strategic Plan.[12]

B. Contextuality

Prior to a consideration of AI standards and tools development, there also needs to be a recognition that not all AI implementations are created equally in terms of impact and risk. Although Workday believes that certain general principles should apply across-the-board (for instance, AI and related technologies should be developed and deployed in ways that respect human dignity and rights), the discussion surrounding the development of standards and tools should be sufficiently nuanced to differentiate between specific applications and use scenarios based on their associated risks. For example, tools that help enterprises improve supply-chain management carry a different risk profile than tools that can predict the likelihood of a stroke from heart rate data.[13]

It is not difficult to conceive of AI use cases that exist--or will be created--with impacts and risks sufficient to necessitate the creation of rigorous standards, if not meaningful regulation. In contrast, there will also be use cases with risk profiles so minimal that a standards-related process would be an unnecessary diversion of limited resources. And there are also AI use cases with potential negative impacts that are already regulated by existing federal statutes and for which additional standards would be redundant. NIST should assist in developing the means by which to distinguish between the relative risks associated with various types of AI implementation within a given technology, including

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[11] See *Enterprise Intelligence: A New Frontier for Innovation* (October 2018), available at https://www.workday.com/content/dam/web/en-us/documents/whitepapers/workday-enterprise-intelligence-wp.pdf

[12] See https://www.nitrd.gov/rfi/ai/2018/AI-RFI-Response-2018-Chandler-Morse-Workday.pdf.

[13] See *Prediction Machines: The Simple Economics of Artificial Intelligence* (April 2018).

differentiating those that directly affect consumers and those that are used in the enterprise context. Because of the likelihood of innovations and technological advancement, NIST should consider whether this differentiation should focus on use cases, discrete technologies, or both. Similar to the need for definitional specificity as referenced above, NIST is uniquely positioned to ensure contextuality is part of any further discussion of standards and tools development.

IV. Role of Federal Agencies

NIST seeks to understand "the current and potential future role of Federal agencies" with respect to engagement in AI standards.[14] In addition to the suggested roles above, Workday echoes the suggestions of others and believes that NIST's forthcoming plan should prioritize federal engagement with international standards development organizations that are seeking to draft AI standards. When done correctly, international standards have the potential to promote trust and confidence. They also mitigate issues that can arise within a global marketplace when individual governments develop domestic standards that lead to unintentional barriers to trade or are used to further protectionist agendas.

It is Workday's understanding that the International Organization for Standards (ISO) and the Institute of Electrical and Electronics Engineers (IEEE) are developing a suite of technical standards for the development of AI. ISO's Standards Committee[15] has completed several standards and is developing a number of additional ones.[16] IEEE has working groups looking at a dozen or more. Given their potential to impact the regulatory framework and progress of innovation, NIST's plan should prioritize U.S. engagement in both processes.

V. Conclusion

Workday appreciates the opportunity to provide input on NIST's Plan for Federal Engagement in Artificial Intelligence Standards and is pleased to share its commitment to ethical AI, provide suggestions with respect to challenges, and encourage NIST to play a role internationally. NIST has a well-earned reputation for technical expertise and a proven track record of working collaboratively with industry partners. As a proponent of AI and related technologies, Workday looks forward to continuing to work with NIST as this process unfolds. Please do not hesitate to reach out to Chandler C. Morse at chandler.morse@workday.com for further assistance.

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[14] See *Artificial Intelligence,* https://www.nist.gov/topics/artificial-intelligence (last visited May 29, 2019)
[15] See ISO/IEC JTC 1/SC 42, https://www.iso.org/committee/6794475.html
[16] See ISO/IEC JTC 1/SC 42, https://www.iso.org/committee/6794475/x/catalogue/p/0/u/1/w/0/d/0