Technical Standards and Artificial Intelligence

What are Standards?

Standards are collections of specifications for items or processes that allow building projects to buy the right size of beam and car owners to replace specific parts of whole engines. Participation in a standard—like contributing a patent you own to it or using it in a device you build—is voluntary, which allows companies the choices they need to make their businesses successful. Technical standards are the blueprint of interoperability. In artificial intelligence (AI) development, standards will continue their essential role.

AI Innovators Compete on Top of Standards

Technology standards help drive innovation, enabling products and services to work seamlessly and ensure user safety. Trusted standards-setting organizations (SSOs) convene willing stakeholders from all relevant corners who voluntarily participate to develop technical standards. For small businesses, standards can be a vital component of their innovative prospects. Standards serve as one option in a mix that includes privately owned technology stacks, and even mixed environments featuring available standards side by side with cutting edge proprietary technologies. Thus, technical standardization is always best understood as a voluntary enterprise. However, where standards are naturally the best option for interoperability, they level the playing field, opening opportunities to compete. As artificial intelligence reshapes industries and society, public trust becomes crucial to its adoption. Achieving this trust requires a policy and legal framework that fosters a dynamic marketplace producing safe, secure, and responsible AI tools. Standards serve as an important girder of this framework, with the National Institute of Standards and Technology (NIST) playing a vital role. Though the private sector primarily leads the standards-setting process, NIST bolsters this ecosystem by offering technical expertise, creating testing and evaluation methods, and providing measurement tools like testbeds.

Standards and AI Governance

The emergence of powerful AI tools, including generative AI, has kicked the standards ecosystem into overdrive. Understanding that the market encounters significant difficulty in evaluating, mitigating, and preventing any novel risks posed by AI technologies, SSO participants are working hard to develop standards and best practice frameworks to assist with this process. This ecosystem response is far better suited to the task than ex ante regulation that seeks to address harms that have not yet emerged and are not understood, especially in light of the tremendous benefits AI technologies are likely to bring. Thus, government's role must be cautious and limited. Existing legal structures must be leveraged to avoid duplicative regulations, fostering a dynamic and inclusive AI marketplace. NIST plays a role here, offering technical expertise, developing testbeds, coordinating and expressing the federal government's needs and interests in standards development, and creating risk management frameworks that validate AI tools. Crucially, NIST has a history of—and should continue—carrying out these functions without sliding into regulatory overreach or seeking political aims. Together, these efforts create a trustworthy AI environment that promotes innovation and levels the playing field for all innovators.

Promoting U.S. Interests in SSOs

To advance American interests on the global stage, the United States must ensure that foreign governments do not exert undue influence on standards proceedings. As foreign actors like China expand their influence in standards organizations, policymakers face pressure to assert national interests unilaterally or restrict participation. However, policies that foster consensus-driven, private sector-led approaches offer a better path for sustained U.S. leadership in AI.

Congress has made strides toward this balanced engagement and must continue to support NIST's core functions through sufficient funding, while reinforcing in clear terms that NIST's role is not regulatory. Chronic underfunding has already impaired NIST's ability to meet its most important obligations, such as validating cryptographic modules and maintaining a robust Vulnerability Database. These functions are essential to ensure American technology makers can remain competitive in the global marketplace, and policymakers must not rob critical resources from those makers to task NIST with quasi-regulatory roles aimed at the latest AI headlines.

To Support the Growth and Potential of the Dynamic American Economy, We Urge Congress to:

- **Fully Fund NIST:** Ensure NIST has the resources to meet its role in AI standards without facing resource gaps.
- **Protect NIST's Core Mission:** Keep NIST focused on its technical advisory role in standards development, steering clear of regulatory overreach.
- **Champion Inclusive, Consensus-Driven Standards:** Support open, private sector-led standards processes that enable the United States to lead globally while engaging constructively with international partners.
- **Reject Restrictive Standards Policies:** Avoid policies that exclude specific entities or impose unilateral U.S. interests in global standards bodies, which could undercut long-term American leadership.
- **Boost U.S. Presence in Global Standards Forums:** Back increased American engagement in international standards organizations to ensure a strategic, collaborative presence.
- **Prioritize Risk-Based, Quality-Driven AI Standards:** Push for risk-based, quality-focused frameworks that prioritize safety and inclusivity, ensuring small businesses can innovate without excessive barriers.