

IEEE SA Universal Policy Communications on the Market Driven Standards Paradigm
Approved by the IEEE SA Board of Governors
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Technical standards are published documents that establish specifications and procedures designed to maximize the reliability of the materials, products, methods, and/or services people use every day. They are strategic tools for raising safety and environmental performance as well as ensuring interoperability. They can drive innovation, competitiveness, sustainability, and consumer protection, while helping to aggregate markets, facilitate technology diffusion, and promote production efficiency as well as product and systems interoperability. They result from collective work by experts in a field and provide a consensus of those experts at the time when the standards are developed and help to make life simpler and increase the reliability and the effectiveness of many of the goods and services we use.¹

Standards in technical domains provide people and organizations with a basis for mutual understanding and are instruments to facilitate communication, measurement, commerce, and manufacturing. They help:

- Open new market opportunities to their users by allowing interoperability of products, services, and processes.
- Create ecosystems that promote economies of scale and healthy competition.
- Provide leadership in socio-technical areas, such as environmental sustainability or ethical values-based design.

These attributes are essential to help ensure that markets remain open, allowing consumers to have choice and allowing new entrants to successfully enter markets, in addition to being instrumental to addressing local and global challenges we face today.

Standards are developed by several types of standards developing bodies from around the globe.

- Those with a geographic designation are usually categorized as inter-national, regional, and national standards bodies that typically function under a nation-centric standardization approach where governments, or bodies closely coupled to government, set or mandate standards.
- Those with a global technical or industry designation include state-independent standards developing bodies with a globally open participation mode. Several professional and technical organizations function in such a decentralized, pluralistic, and industry-led manner, and typically do not involve national representation, being thus exempt from state intervention.

The current standardization system has evolved over time. More than one hundred years ago, National Standards Bodies (NSBs) facilitated the industrialization of national economies. Later, in order to facilitate interstate trade and resources allocation (such as radio-spectrum), the inter-national system was built on top, with NSBs being vertically integrated as members of inter-national standardization bodies, such as the International Standardization Organization (ISO) and the International Electrotechnical Commission (IEC).

¹ <https://www.irena.org/inspire/Standards/What-are-Standards>

The advent of Global Standards Developing Organizations in the digital era, including IEEE, IETF and W3C, facilitated the globalization and digitization of industrialized economies through a market-driven, decentralized direct-participation model, where there are no intermediaries between the originators of a promising idea and the group of peers deciding the beginning of a best practice or standard, and where any individual or organization from any location worldwide has the ability to submit a proposal. A new kind of techno-universalism emerged, based on global democracies of technical experts and their peer dynamics. This model leverages and expands knowledge by allowing for diversity of opinions and approaches, while providing flexibility to acknowledge and address change and varying needs.²

As witnessed in the successful development and deployment of internet standards, the globally open standards approach has demonstrated agility in our ever-faster changing world. Driven by technical merit, it harnesses global creativity and expertise through bottom-up collaboration without state intervention. This approach enables the advance of cutting-edge technology and empowers the rapid economic implementation of high-value, high-demand products and services, with societal benefits. It also drives technical innovation via processes that ensure direct, open participation, and which embrace different perspectives and interests to reach common goals. It promotes the use of professional expertise and judgement that opens the door to participation in how technical issues are assessed, decided, implemented, and certified.

This global model has thus become a vital component of the international standardization ecosystem, as it:

- supports market-driven economies, where multiple and varied sources of standards meet the needs of a variety of industries and technologies;
- produces standards that are aligned with internationally recognized principles for the development of standards;³
- provides an effective framework for the commercialization and diffusion of technologies by bringing into agreement information flow;
- clarifies technical product design for interoperability of components, manufacturing, and service requirements;
- establishes common rules and quality requirements;
- provides equal access to standards setting, regardless of nationality or geopolitical constraints, thus contributing to a broadly representative standardization environment, and;
- moves standardization toward open, global horizons and the creation of an environment in which companies can succeed world-wide.

This model allows for flexibility relative to the rapid pace of change we witness today, evolving and growing market and consumer needs, and has in many cases anticipated and taken the lead in addressing the serious challenges we face with respect to climate, energy, security, health and well-being. Standards produced from standards developing bodies working within this framework have thus become a key means to help create and expand markets and thus maximize benefits to society, consumers, companies, and governments.

² <http://globalpolicy.ieee.org/wp-content/uploads/2020/08/IEEE20014.pdf>

³ https://www.wto.org/english/tratop_e/tbt_e/principles_standards_tbt_e.htm

Global, market-driven standardization excels at embracing new participants and communities, especially in the context of the acceleration and convergence of technology, the emergence of new disruptive innovations, growing markets, and increased global challenges. These factors bring needed new actors and bodies into the standardization arena to address rapidly evolving and changing dynamics in the standards ecosystem to ensure innovation and creativity for market growth and society's benefit.

This public policy communication was developed by the IEEE SA and represents the considered judgement of a group of IEEE members with expertise in the subject field. The statements taken by IEEE SA do not necessarily reflect the views of IEEE or its other Organizational Units.

About the IEEE Standards Association

The IEEE Standards Association (IEEE-SA) is a globally recognized standards-setting body within IEEE. We develop consensus standards through an open process that engages industry and brings together a broad stakeholder community. IEEE standards set specifications and best practices based on current scientific and technological knowledge. IEEE has a portfolio of over 1,500 active standards and over 650 standards under development. IEEE standards are made available for implementation in products and services as needed by businesses and governmental bodies and many are foundational for entire ecosystems. IEEE standards are available to other SDOs for direct adoption at the international, regional, or national level.

IEEE has a unique position in the standardization landscape, as its standards development work resides within an organization of over 46 Technical Societies with approximately 400,000 members from around the globe, including from a broad spectrum of industry sectors. The structure of its standards development program draws both individual technical experts and entities to participate in standards development enabling cross-sector collaboration. IEEE also coordinates with standards bodies around the world through membership and liaisons, or through formal agreements, which can have many purposes, including to facilitate partnering on joint efforts, promote adoption and/or distribution of standards in different regions or countries, encourage closer cooperation between organizations, and facilitate coordination and collaboration between technical communities.