Open Standards, Safe India

When we think of "the law," we think naturally of acts of parliament, perhaps supplemented by commentary and reports. We think of the orders of the judiciary and their accompanying opinions, as well as the regulations of the Union and state governments, and any guidance that is issued to accompany the regulations. As the saying goes, "ignorance of the law is no excuse," and it has long been public policy in India and other democracies that citizens must be free to read and repeat the law to inform themselves and their fellow citizens of their rights and obligations.

In our modern world, there exist scores of technical standards, which are often used in the law proper and specify codes of practice and safety. In India, the apex organization for technical standards is the Bureau of Indian Standards, considered a global leader in this field.

Many common household and industrial items cannot be sold unless they are certified as meeting mandatory safety standards. The safety of milk powder, for example, is specified in Indian Standard 1165 and any milk powder sold in India must carry the certification

stamp of the Bureau. Likewise, packaged natural mineral water must meet the requirements of Indian Standard 13428 and medical X-ray equipment must meet the general and safety requirements of Indian Standard 7620.

There are over 19,000 Indian Standards, covering a wide swath of our modern technical world. For example, Part 4 of the National Building Code of India 2016 covers fire and life safety, with provisions for requirements for fire exits in buildings such as hospitals, schools, office buildings, and homes. We read frequently about people being sent into clean sewer systems and succumbing to injury and death. Indian Standard 11972 is the "Code of Practice for Safety Precautions to Be Taken When Entering a Sewerage System."

The standards cover a huge swath of professions and practices. There are 374 standards covering the proper packing and application of pesticides used in agriculture. There are 333 standards covering the safety of textile machinery and fabrics used in industry. Indian Standard 15498 provides guidelines for improving the cyclonic resistance of low rise houses. Indian Standard 9873 contains safety requirements for toys. There are 8 standards covering the safety of playground equipment for parks and schools.

These standards are technical, but then so is our modern world. Take the safety of playground equipment. Indian Standard 6869 (Part 6) covers swings. It specifies a safety test to make sure fingers, hands, limbs, and the head are not trapped. It specifies the minimum size of seats, and the load that the seat should bear. Indian Standard 6869 (Part 4) specifies a safety requirement for

jungle gyms and castle climbers: the maximum height shall be no more than 3.2 meters above ground level.

Indian Standards represent the best codified knowledge for safety in India. They are developed by government officials, academics, industry participants, and citizens in an open process that is supervised by a standard's council which is headed by two ministers of the Union government, and includes participation of members of parliament, secretaries from several central government ministries, representatives from state governments, consumer organizations, farm associations, and eminent scientific and research organizations.

The standards are developed in draft form and circulated for public comment. When the final standards are issued, they are noticed in the Official Gazette. Once standards are officially adopted, they are used extensively by the government. In addition to the 146 standards for mandatory certification, the standards are used by state and central government ministries for incorporation into regulations. They are frequently cited by the Hon'ble courts in their opinions. Legislation of parliament will often cite the standards.

For many years, Indian Standards were only available for sale, with strict copyright restrictions on their use. A professor was once sued for having used extracts of standards in a civil engineering textbook. The standards were only available for sale in a protected format, that prevented copying or sharing of the documents. This meant that the standards were not widely circulated. In 2022, the Bureau of Indian Standards took an important step: they made all Indian Standards available for free download for non-commercial use.

There is one exception, which is standards developed by the International Standards Organization (ISO) and subsequently adopted as an Indian Standard, a minority of the standards issued. Those are restricted due to international agreement.

However, for over 17,000 standards developed in India by Indian volunteers, those standards now available for free.In many countries throughout the world, technical standards are only available for high prices and subject to extensive license agreements.

Why is that? Because standards bodies want the money. However, this is not universal. The Australian building code, for example, is widely available for free. Likewise, in Ecuador, all standards are available for citizens. Focusing on revenue from standard sales is counter-productive.

The Bureau of Indian Standards makes the vast majority of its revenue from certification services. Less than 2% came from standards sales. Making Indian Standards widely available for free commercial use advances the mission of the Bureau and makes India a safer place. The Bureau should be congratulated on this important step.

My own work has long focused on computer network standards. In the late 1980s and early 1990s, many people may not realize this, there were two Internets. One was developed by large telephone companies and government bodies, and was developed with proprietary and expensive standards that were subject to numerous restrictions on use. That network was called Open Systems Interconnection, known as OSI. It is a distant memory, and it failed.

The other Internet, the one I worked on, was developed by volunteers from academia, industry, government, and research (just as the Indian Standards are developed). That Internet was developed by the Internet Engineering Task Force. Our effort wasn't supposed to succeed, the establishment firmly backed the OSI approach. But, our standards were open and non-proprietary, and that led to protocols such as email, the World Wide Web, telephony over the Internet, and many other innovations that make up our modern Internet.

It was because we were open that engineers all over the world were able to look at our standards and improve them. Open standards are key to our modern world, and the Bureau of Indian Standards has taken an important step. They continue their long tradition of innovation and codes of practice, and help the movement for "Safe in India." Bravo.

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Carl Malamud is the President of Public Resource, a registered not-for-profit organization in the United States. He has written 9 professional reference books in databases and computer science and has long been an active participant in Internet standards. In India, he has worked with a number of organisations, such as the Indian Academy of Sciences and the National Law School of India University, to help make their information more broadly available.