Guest Editorial Preface

Special Issue on Practices in Standards Development

Karl F. Best, Boyertown, Pennsylvania, USA

The readers of the *International Journal for Standards Research* are acquainted with the well-documented benefits of using standards. What is less discussed in these pages is where standards come from, i.e. how they are created. This special issue on the development of standards addresses a small number of related topics. Much more, of course, could be said.

The development and approval of standards is a practical affair. Standards are usually developed under the auspices of an organization, using an accredited process, with most work done by a volunteer team of subject matter experts. But these things don't just happen by themselves; the organization and its process must be in place, volunteers must be willing and able to do the work, proper legal considerations must be addressed, and a means for distribution of the standard must exist. All of this must be in place before the standard may be delivered and implemented by organizations and individuals in order to address specific market needs.

Standards are developed by any of a number of different types of organizations. Generally regarded as being at the top level are the international standards organizations ISO, IEC, and ITU. While ITU is a treaty organization, part of the United Nations, ISO and IEC are private, composed of member countries. By "international" we mean that countries rather than organizations or individuals are the members. These three organizations work cooperatively to develop standards within their various scopes of work.

Standards are also developed by organizations at the regional level, the prime examples being CEN, CENELEC, and ETSI who develop standards for the European market. At the national level, standards bodies such as DIN in Germany, BSI in the UK, AFNOR in France, and ANSI in the US represent their countries' interests as members of the international organizations, and also set standards to meet national needs. In the case of the US, standards are not developed by the national body, but rather ANSI accredits other organizations to develop national standards. Many of these national bodies are government agencies, though some are private.

Other standards developing organizations, whether accredited or not, can be industry or professional bodies, including consortia such as W3C or OASIS. Some of these organizations operate at a national or regional level, but most work at a global level. In such organizations, a company or an individual can be a member.

In most instances the use of individual standards is voluntary (hence the phrase "voluntary standards"), though in many instances safety or health-related standards are incorporated into national or local regulations. Because of the prevalence of the voluntary use of standards, standards organizations must develop quality standards that address specific market needs in order for the standard to be adopted; a standard that is not adopted is a waste of time and development resources.

Standards organizations develop quality standards by following tried and true practices, which is why most organizations end up having similar processes. Whether required for accreditation purposes or not, the development and approval processes of most organizations include multiple stages of

development, review, and revision, followed by multiple levels of approval. Most organizations seek to have participation in the development and review processes by a broad representation of stakeholders in order to ensure that a broad range of perspectives and needs are addressed. Openness and accountability of the development process promotes the credibility of the organization and its delivered work; without that credibility the standard would not be adopted. (Any organization or even individual can write a standard, but without any credibility the standard is not going to be adopted.) The principles of openness, balance, accountability, coherence, transparency, and consensus in standards development have been accepted by treaty at the World Trade Organization, and adopted and used by standards organizations at all levels.

In addition to having an accredited process (or a process that could be accredited) for the development and approval of standards, standards organizations need to concern themselves with a variety of other issues. Protection of the organization's intellectual property rights is a challenge facing many organizations, especially when standards are incorporated into a law or regulation. The intellectual property that participants bring with them to the table when developing the standard must also be considered. Volunteer subject matter experts must be managed, and liaison to/from other related organizations must be established and administered. Individual standards development projects, as well as the organization's portfolio must all be managed using good project, program, and portfolio management practices; this includes selection and prioritization of standards projects, and the allocation of finite resources based on priorities, addressing risks and dependencies, and scheduling for delivery. Standards organizations must also act as businesses so need a business model that ensures adequate resources to pursue their work; this demands membership and revenue models, distribution of their standards product, staffing, infrastructure, etc.

In short, there is much to be addressed with regard to standards, not just how they are used and the benefits they provide, but also how they are best made. I hope that you enjoy the papers presented in this special issue, and look forward to seeing additional research on other related topics in the future.

Karl F. Best
Guest Editor
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