Chapter II
Standards and Standardization Practice

In tracing the theoretic history of weights and measures to their original elements in the nature and the necessities of man, we have found linear measure with individual existence; superficial, capricious, itinerary measure, and decimal arithmetic, with domestic society; weights and common standards with civil society; money, coins and all the elements of uniform metrology, with civil government and law; arising in succession and parallel progression together.

—John Quincy Adams, 1821

INTRODUCTION

Technical standards have always played a vital role in the development of industrial society. Historically, standards can be traced to origins in the invention of currency and in early human activities such as warfare, trade and printing—in societies as diverse as ancient China and Rome. For example, Venetian war galleys were mass produced: the size, fittings, ropes and even oars were all standardized and interchangeable (Cargill, 1997, p. 18). Throughout history, standardization evolved as a social practice and it tends to reflect the particular political and economic cultures involved.

The key to the process was that there was a substantial economic advantage to be gained from creating and using a standard. One would like to believe that somewhere
there was someone who sat down and thought this out, but it probably occurred over several generations. (Cargill, 1997, p. 16)

Although a detailed history of standardization practice is beyond of the scope of this treatment, this chapter will attempt to briefly acquaint the reader with the historical context, taxonomy, terminology and present landscape of the global system of technical standardization.

Beginning from a broad sense, the term standard may be defined as:

...something established by authority, custom, or general consent as a model or example, ...something set up and established by authority as a rule for the measure of quantity, weights, extent, value or quality. (Webster, 1977, p. 1133)

Upon further examination, however, numerous other specific definitions may be found, depending on one’s disciplinary perspective or purpose. Of particular relevance here is a more strict sense of the term determined by the nature of the authority mentioned previously and the legitimacy thus conferred. Formalists will assert that standards are distinct from specifications (which have less legitimacy). For example, a formal international standard definition of “standard” is a:

...document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities for their results, aimed at the achievement of the optimum degree of order in a given context. (ISO/IEC, 1996, sec. 3.2)

Variability in the meaning and precision of the term standard is an important factor in how the entire topic is discursively constructed and how various interests are served by its use—an issue recognized in an OTA (Office of Technology Assessment) study.

The choice of definitions has major policy implications. How the term “standards” is used in this study, for example, determines the terms of the debate and the range of government options developed for dealing with problems in the standard setting process. (Congress, 1992, p. 5)

In any case, it is important to recognize that technical standards are not value-free—an idea that technologists may be often remiss or reluctant to acknowledge. It has been noted that, “...we do not discover a problem ‘out there,’ we make a choice about how we want to formulate a problem. That choice reflects certain values and in turn constrains the realm of possible solutions” (Cheit, 1990, p. 150).

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