

A Modest Proposal For Business Based Standards

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ABSTRACT: The article examines standards from a business perspective, using as a central theme the proposition that standards are primarily a marketing tool. The article examines the rationale for this belief, then proposes a standards development methodology that more accurately reflects the business basis of standards than does the rule based process presently used by Standards Developing Organizations (SDOs). The intent is not to replace the current structure of standards in the U.S., but rather to provide a larger context for standards developers.

The secondary title to this paper is "**The purpose of standards is to support product and system marketing**", and it is this statement that forms the core of this paper. In keeping with the theme of COMPSTAN 88, this paper will examine the impact that business decisions have upon standards and the imperatives that standards development have when confronting a business decision. It is hoped that the paper will air several new points of view, as well as acting as a catalyst for further discussions on the nature and implications of standards to a heterogeneous society.

To begin, I would like to offer definitions of some of the words in the secondary title, to insure that some of the pejorative nuances are dispelled, and that there is a commonality of understanding in the meaning of what is being proposed. I use the word *purpose* in the sense of an ultimate rationale. "*Standards*" is generally limited to *de jure* standards produced by an SDO; when the reference is to *de facto* standards, this will be made clear. (De facto standards, by definition, have already served a business purpose, in that they have been accepted by the market. However, there is no predisposition for a de facto standard to be non-proprietary.) The word "*support*" is used in the conventional sense, but has the additional meaning of helping or aiding. Finally, "*product and system marketing*" is a business school euphemism for the function of business - that of creating, developing and satisfying a user need. (Although this can be referred to as business, it lacks the appeal of the more complex

phrase, and is more salable to people enrolling in MBA classes.) The sentence could be recast to state that "*Standards ultimately serve to help business*", which would probably be more palatable, but would also not have the directness and impact of the opening.

With this common description, I would like to propose a new way of looking at the process used to create standards - one that tends towards a non-quantitative, non-procedural point of view. Prior to this analysis, however, it will be necessary to look at some of the traits of both the current process and the "randomness" of marketing.

Much of the current process that is used is predicated upon the process rules used by the various SDOs to develop standards. (I draw a distinction between the process used to create standards and the standards process. The term "process used to create standards" describes the cognitive activities that deal with standards creation. The term "standards process" describes the codification necessary to document the cognitive processes to allow others to implement them.) I do not feel that an examination of these rules would serve any useful purpose. There are several reasons for this, chief among them being that I believe that, while an SDO serves no real function in standards, it is a vital necessity in the **standards process**. A simple analogy would be ordering a drink; one orders the drink, not a glass. The glass containing the drink is explicit, and without it a drink is, at best, messy. However, the function of a drink is not the glass, but rather the contents of the glass. So it is with standards. The SDOs (ISO, X3, IEEE, EIA, etc.) serve to provide a framework to contain the standard, but are themselves not the reason for standards. SDOs are the keepers of the process; they do not participate in the process used to create standards, except to insure that the rules are followed.

Given that the SDOs exist to facilitate development, the only other source of standards would be the participants in the standards process. It is therefore necessary to examine the characteristics of the people who participate in the process of standards creation. This process, within the Information Technology

industry. can be seen as a multi-step attempt by the technically trained members of the IT industry to conceptualize, define, analyze, and solve a problem. It is here that several prominent characteristics begin to emerge.

The engineers who compose most of the standards committees - subcommittees, working groups, or whatever - have usually all had formal and rigorous technical training. One of the basic beliefs of this technical training is the "scientific method", the keystone of the Western empirical society. The scientific method postulates a process that begins with the determination of a question to be answered, the creation of a methodology to provide important and/or related information to aid in the solution of the problem, the finding of this information, the conversion of this information to facts, the analysis and application of these facts to the question, and the discovery of the answer to the question. An additional caveat is that the solution must bear repetition.

With this training, which is reinforced by all of their professional activity, it is logical that the process that has evolved, and which has been codified by the SDOs, is an extension of the scientific method. There is the problem (or proposal), the formation of a committee to study the problem, the formation of a committee to analyze and solve the problem, and the formation of a committee to insure that everyone involved participated and played by the rules. It is a structure that emphasizes the rationality of the solution.

There is a problem with this approach, however. The scientific method is applicable primarily in dealing with quantifiable processes and problems. Despite the rhetoric of business schools, there is no quantifiable methodology for understanding "market" preferences. There is a randomness associated with the entire process of marketing. Standards creation is usually done by people with a professional background that emphasizes the scientific method, but the concept of marketing - and anticipating the markets needs - is still an art, not a science. I do not believe that these are too contentious.

What follows, however, will be. I believe that standards are an attempt to predict or shape the market, using the process of standards creation just as marketing people use their own methods - including planning and advertising - to shape the market. Additionally, there is no clear cut understanding on the part of many who participate in the process of the ultimate outcome of their actions, other than the production of a standard. But the steps before and after the production of a standard are as critical, if not more so, than the standards creation itself.

Let me cite an example. The infamous QWERTY keyboard is known to everyone in the industry. It is common knowledge that its layout was created to slow the typist, insuring that the strikers on the early mechanical typewriters did not jam. The question that no one asks is why the QWERTY layout became a standard. There were other, competing non-efficient layouts used in the late 1880s. Each typing school used a machine, and each manufacturer had a different layout. As it happened, the Cincinnati School of Typing advocated a particular method of typing, and used the Remington QWERTY keyboard. The school was challenged to prove their claim of superiority in a competition. The professional typist who carried the banner for the Cincinnati School of Typing won the contest handily - **but not because of the QWERTY keyboard.** He won because he had memorized the letter positions, and was the first advocate of the concept of touch typing. The victory received national press coverage, however, and the dominance of QWERTY - and Remington - was assured. A standard was achieved - not because of the hardware, although everyone remembers that - but because of an innovative and clever application of that technology. It is this aspect - *the ultimate usability and applicability of the standard* - that most standards developers seem to overlook.

The question that is central to the paper, and to the concept of the the business use of standards, is how to avoid the situation where application and usability are overlooked. And this is where standards becomes a business proposition and substantially more complex than it presently is. To restate the problem: *What is a process whereby a standard can be developed that is responsive to the market, yet embodies a valid technical response to both a current and future question?*

I would submit that the answer to the question lies in a re-examination of the concepts of the process used to create standards. The process used to create standards is usually assumed to be the same as the standards process - that is, the container and the contents are assumed to be equivalents. I propose the following functional definition of the creation process. Acceptance of some of the concepts in this definition of a five step process will expand the role both of and for standards, and may have a significant impact on the methodology of IT standards in the U.S.

The process requires recognition that standards are more than writing down the technology necessary to accomplish a given task. It requires that participants in the standards process understand that standards have what would appear to the IEEE as an unusually long gestation period. IEEE presently has problems with the two to four year standards creation process. The cycle being proposed will expand that time - not in the area

of actual writing or doing, but in the area of thinking and conceptualizing.

The five steps to the process of standards creation should be as follows:

- Pre-Conceptualization Stage
- The Formal Process
- Conceptualization
- Discussion
- Writing the Standard
- Implementing the Standard

There are three distinct stages - the Pre-conceptualization, the Formal process, and the Implementation. If the proposal for a standard makes it over the first hurdle, and enters the formal process, it still must go through three phases of the formal process. *If it successfully completes all of these steps, it has the potential for being a viable standard - one that is accepted by the IT community, and which will and can be used. This final hurdle is the implementation stage. Failure to complete any of these stages will not disqualify it from being a standard - it may only disqualify it from being a standard that is both used and useful. The approach that is being advocated is a turning away from the pure writing - rather, it is turning to the business aspect of the standard - to make the standard ultimately serve to help business.*

The pre-conceptualization stage is the stage in which an idea is examined - outside of the entire standards process - to see if there is a potential for a standard. The idea usually originates with a single person, who then has the difficult task of finding support for the concept. It is in this stage that the determination of whether or not there is really a need for the standard should occur. The concept should be acceptable to the user community in general, yet should be focused enough so that it can be implemented given current or only slightly advanced technology. Additionally, there should be a confirmation that the potential users of the standard exist outside of the immediate circle of acquaintances and friends of the originator. Other traps which are equally dangerous include the use of the standards process to provide a solution that has no intrinsic improvement over the current standard other than as a salve for the originator's ego, the use of a standard to cover or remedy design flaws or marketing errors, or the creations of a proposal to solve a problem for a phantom or transient problem. Once the market need is determined and validated, and the appropriate technology matched to the problem, the pre-conceptualization stage is completed. The time it takes will vary with the persuasiveness of the originator, the magnitude of the conversion effort needed - within one's own group, the expanded group,

the market - and the complexity of the proposed solution. In effect, the pre-conceptualization stage is the market research and R&D stage of standards, in which the market is tested to see if the problem exists and if the proposed solution is technically valid and matched to the problem at hand.

Following all these activities, the Formal standards process can now be initiated, if the concept is to be standardized. It may be decided by the originator that there is more money to be made in not standardizing the concept - that being the sole proprietary provider of a solution has larger economic benefit than sharing the solution. If the economics play out this way, the originator would be foolish to standardize, unless she/he was inspired by altruism. However, if the originator believes that the market could adapt an equally viable public solution, that the market can leapfrog the solution over time, that competitors might be able to offer similar solutions, or that a value added on top of a standard solution is more profitable, then the standards route should be pursued.

The formal standards process begins with the conceptualization phase. In this phase the proposed work item is given to an accredited standards body. Finding the correct standards body may take a while - sometimes the jurisdictional disputes can be lengthy, especially if the proposal isn't clear in what it is trying to solve. Again, the originator should be aware of the need (or market) that is being satisfied by the proposal. Additionally, there is a need for a degree of understanding of what the technical solution will look like. The idea of using a very advanced technology will usually be rejected; standards committees are not R&D playgrounds as much as places to apply R&D for practical use. If these hurdles are correctly met, the standards group being approached will validate the concept of the standard, and a committee will form. If it doesn't, it indicates that there is no interest in the problem and solution, that the market doesn't understand it, or that something is wrong. It might be at this stage that the originator may have to rethink the proposal - if there is not too much of the originator involved in the proposal.

Once the review in the conceptualization stage is complete, and the proposal has been examined for technical viability, rubber stamped for economic need, and passed into a committee, the proposal enters the discussion phase.

The discussion phase is the phase that will determine the viability of the standard. The key figures in this phase are the committee chair and vice chair, who are responsible for obtaining the consensus necessary to produce a standard. Additionally, these figures are responsible for structuring the committee, defining the

exact nature of the standard, accepting the compromises necessary to achieve a workable standard, and for maintaining the schedule of the committee. In effect, it is in this stage that the standard comes into being. It is also this stage that is the most roundly criticized of all of the activities of the standards process. It can take up to six months for the committee structure and goals to be decided in a well run committee; in a poorly led committee, this stage is never completed and consensus is never achieved.

The primary function of the committee in this phase is the determination of what exactly is being standardized. It is here that goals and objectives are set, concepts are firmed, and the methodologies are decided. The issues that must be decided in the technical sessions should be surfaced in this stage as well - decisions that must be made in the context of the purpose of the standard. The key to the success of the standard, and the committee, is the fixity of the committee on what the standard is supposed to accomplish and for whom the standard will accomplish this. This is the business and marketing entering. As an example, it is not enough to determine that a language standard is required. Considerations include who will use it (an installed base, or entirely new user set), how it will be used (commercial or scientific), whether it will be installed on a large or small processor, whether it is capable of being subsetted, and a host of other considerations. Key among them should be an economic consideration - will the proposed standard receive support from major vendors as well as users. In pure economic terms, the standards developers are looking at supply and demand. Vendors supply, users demand. Additionally, the committee must decide if the vendors will use the standard initially (market push) or the users will demand the standard (market pull). This becomes important in designing the standard; if it is to be a pull standard, it must be able to demonstrate some overwhelming advantage to the users to cause them to demand the standard of their vendors. If it is to be a push standard, the vendors' must believe that there is a business imperative that will cause them to supply the standard. These two factors will not, of course, be as clear as all that, and may entail much discussion between the various parties. Additionally, the market will become aware of the fact that there is a standard that is arriving. They must, however, be considered in the discussion stage, because the success of the standard will ultimately rest upon the use of the standard by the market.

Once the hurdles of the discussion stage are completed, (the market is becoming aware of the standard, and the standards committee becomes aware of the market and market expectations), the actual writing of the standard can begin. This is where everyone gets a

crack at printed immortality - the part of standards with which everyone is familiar. This is the stage in which concepts are translated from the discussion section into the precise English of the standard. It is a stage in which the term "wordsmithing" assumes new proportions. The standard must be written in a manner that allows no ambiguity in the interpretation of the language, but permits multiple interpretations of the standard - where the standard writers wish these interpretations to occur. The procedure has a series of loops, verification procedures, review cycles, checks and balances to insure that the standard being produced is responsive to the input of the participants, that everyone who has an interest has an opportunity to participate. These cycles not only provide anyone the opportunity to comment, they also provide the market with the exposure to the standard, increasing awareness and potential acceptance. Finally, when the process is completed and the draft standard has been reviewed by a large audience, the appellation American National Standard is assigned, and a new standard appears.

Unfortunately, this is where many of the participants in the standards process walk away, feeling that they've done their job. In truth, this is when the real job of doing standards starts. The final and most important phase of the process has just begun - the implementation of the standard. There are significant activities that are essential here - but many people conveniently forget them.

To begin, vendors implement standards when there is a reason for it. Standards - that is, external voluntary standards - usually cost money to implement. There is almost always a proprietary solution that is cheaper or more profitable to utilize. Vendors use standards because there is significant pressure from the market to use them. One of the most significant pieces of legislation for standards has been the Brooks act, which forced manufacturers to use standardized interfaces. (The legislation was significant; it may have outlived its purpose now, but it had a definite impact upon the industry.) By and large, however, customers do not ask for standards; they are only beginning to appear in state and local procurement, usually in phrases similar to "Must comply with all ANSI standards in effect at the time of procurement."

The Federal Government, other than the Brooks Act, occasionally bids standards. In many cases, however, it does not. Private industry does not bid standards, although it claims to want interoperability. What it really wants is a low cost solution - and if the solution offered is "sorta standardized", that's good enough.

The real benefits of standards lie in several areas - for both the manufacturer and the user. Firstly, the

user has a metric, against which the diverse offerings of all vendors can be compared. If the product or service being offered is not "standard" to the user, then the object does not bear consideration, unless there is some other overwhelming advantage. (In this case the standard has acted as a "hygienic factor" - its existence does not guarantee a sale, but the lack of the feature does guarantee that a product will not be considered.)

Secondly, the standard product is "pluggable". This aspect of the standards world cannot be overemphasized - nor can it be precisely defined. Basically, it indicates that a "standard" product is a known commodity to which other vendors can add value. It cuts both ways for the vendor, and also cuts both ways for the user. The vendor can see the market plugging a product - but it is a market that might not have been there if the opportunity for enhancing the product did not exist. Digital, with its early dependence upon the OEM, is an example of a company that used this aspect of standards to grow. Unless a vendor can be all things to all customers, a standard allows others to help the vendor expand the market. When there is predatory plugging - when standards do not expand the market, but rather cause intense competition for a limited market, there is either something wrong with the market or with the standard.

Finally, the use of a standard allows the sales people and the customers to concentrate upon what the vendor is going to "bring to the party." If the standard is seen as a baseline for the purchase of equipment (which it rarely is, unfortunately), each vendor should be able to display some added value to the product, given this baseline. The value added can range from price to enhanced operation to longevity - whatever a vendor thinks is important to that customer.

However, engineers are rarely involved in writing purchase or procurement specifications. As a result, there is no market pull for standards - users rarely demand standards in their purchase of IT equipment. As a result, the vendors are left to provide the market push for standards. And this is why vendors are such a significant force in the standards world. Vendors see standards as a revenue impacting activity. If a standard is produced that none of the major vendors of IT equipment can support, there will be contention. It has the potential for producing a negative economic impact - and that is anathema. The major opposition to selected standards from the vendor community comes not from an ingrained desire to keep computing under control, but rather from a need to be able to implement the standard with a minimal disruption to the business at hand. If you threaten a vendor's existence with a standard, it would seem only legitimate that the vendor would object and attempt to mitigate the threat.

To return to the central theme of the paper - *The purpose of standards is to support product and system marketing, (or) Standards ultimately serve to help business.* The purpose of standards is to allow the market to act with more certainty in a field that most people find frightening. Standards should serve as "cheap insurance" to people to allow them to compare products, to understand products, to believe in products. They serve the market by providing a sense of assurance to the user, who has something that can be defined and named, and therefore can be known. And with this knowledge comes the ability to use and the ability to grow. And as the market grows, business grows, and creates yet more needs which then start the entire process again. Ultimately, standards and business go hand in glove.

The conclusion is, I believe, inescapable. Standards, far from being a technical discipline, are involved in the strategic marketing of technological change - helping to prepare the market, and the ultimate user for this change, and providing the direction which the change will take. In providing this service, standards - and standards participants - are shaping the nature of business in the United States and the world.