



Attorneys at Law

Consortium Standards Bulletin

A ConsortiumInfo.org publication

AUGUST 2005

Vol IV, No. 8

FEATURE ARTICLE

UNDERSTANDING THE ROLES AND OPTIMIZING THE RELATIONSHIPS OF GOVERNMENT AND SSOS

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Abstract: *Governmental rule making and private consensus-based standard setting activities have long enjoyed a synergistic relationship in most nations. But in the United States today, cooperation in many industry sectors is more situation-based than carefully planned in advance for maximum productive results, in part because there is no public-private collaborative structure that sets guidelines for assigning specific standards projects to one system or the other, or to provide support by one system to the other when a standard is completed. This article explores some of the similarities and differences between these public and private systems; compares the strengths and weaknesses of each; suggests criteria for determining which efforts should be pursued in one venue or the other; and proposes ways in which the two systems could learn from, and more effectively work with, each other.*

Introduction: When we think of a standard, we typically think in terms of the specific purpose for which that standard was created: the performance required by a product, the requirements needed to establish interoperability between two devices, and so on. In a sense, standards are examples of “Thou shalt” requirements.

When we think of laws and regulations, we typically think in terms of rules that specify what cannot be done (e.g., trespassing), or the limits within which things may be done (e.g., speed limits). In other words, laws and regulations usually constitute “Thou shalt not” rules.

Of course, the dividing line between these two types of standards, one of which relies upon the power of the state, and the other of which is consensual, is hardly so simple, and one need not look too far to begin to find areas where the two types of rules begin to intersect. For example, laws and regulations are frequently created to protect public health, safety and welfare. But many non-governmental standards are created for the same purpose. And, indeed, local, state and national governments frequently incorporate standards created through the consensus process into their own laws and regulations (e.g., the repurposing of electrical and construction standards into building codes). Similarly, governments are huge purchasers of goods and services, and until recently, “government unique” standards were the norm in the United States rather than the exception in the procurement process.

The concerns that motivate legislators and regulators, on the one hand, and standards development organizations (SDOs) and consortia ¹ (referred to collectively below in this article as “standard setting organizations”, or “SSOs”), on the other hand, are in many ways similar. But they are also in many ways dissimilar, as are the processes by which they are created.

Besides overlaps in subject matter and the incorporation of standards into laws and regulations, there are other intersections between these two spheres as well. For example, two of the global “Big I’s” (the International Organization for Standardization, or ISO, and the International Electrotechnical Commission,

or IEC) are private organizations in which there is national participation. But the third Big I (the International Telecommunication Union, or ITU) became a special agency of the United Nations in 1947. Consequently, while vendors and others may also participate as members, countries participate in the ITU as member states at the governmental level. Within individual countries, SSOs may be highly distributed and include government agencies only as individual members (as in the United States), or the standards function may be carried out entirely by government agencies, or by government-chartered organizations (e.g., DIN, the German Institute for Standardization).

The number of other interrelations is legion (e.g., the World Trade Organization's rules prohibiting the use of standards to erect barriers to trade, and the various regional European standards agencies created under the governmental authority of the EU itself). These interrelations could be the subject of an extremely lengthy article in their own right.

There are thus not only distinct roles played by both governments and SSOs, but also extensive interconnections and interdependencies between these two sources of the rules that govern our behavior, environment, products, health, safety and virtually every other aspect of our lives. Acquiring an understanding of the ways in which these two standard systems are different, as well as the characteristics, dynamics and goals that they have in common, can therefore be useful in charting how the most useful outcomes for society may be achieved through both approaches working in cooperation.

Since many specific needs can as effectively be addressed through either the legislative or the consensus process, it is also important to appreciate which venue would be most appropriate in a given circumstance, so that the governments know when to act, and when to defer, to the private sector. Similarly, since legislative resources are limited, it is important to be able to demonstrate why public resources should be allocated to a given purpose that ostensibly could be addressed through a private sector response. Finally, where both systems must work in tandem, it is important to understand the unique abilities (and weaknesses) of each in order to make the most effective and efficient use of the resources of each, and to ensure that the efforts of one are not wasted due to the unwillingness of the other to become involved in a supporting role.

The purpose of this article is not to present a comprehensive treatment of this subject (which would require a work of far greater length), but to selectively highlight some of the aspects of this symbiotic relationship in order to raise awareness and to encourage greater dialogue and collaboration between those that operate in these two separate but necessarily related systems.

Areas (and degrees) of commonality: Both governments and SSOs share many goals, concerns, and areas of focus. But in most or all of these instances, there are also important distinctions that arise as a result of the process that each system employs, the backgrounds of those that make the decisions, the constituencies that they represent, and the motivations that bring them to pursue their individual goals. These areas of commonality, and the relevant distinctions between them, include the following:

Subject Matter (e.g., Health and safety): Protecting the lives and promoting the health of the citizenry is one of the acknowledged roles of government in the modern world. In the United States, this became increasingly true over the last 100 years, and a vast network of laws and supporting regulations and enforcement agencies have been created in areas such as workplace safety (the Occupational Safety and Health Administration, or OSHA), food and drug efficacy, safety and purity (the Food and Drug Administration, or FDA) and pollution abatement and remediation (the Environmental Protection Agency, or EPA).

But many of these same concerns have been addressed by private industry, although the motivations that bring private companies together for that purpose may be rather different. For example, industries can attract government regulation if they are not considered to be sufficiently safe and responsible, and industry therefore often acts out of self-interest in setting the rules by which it will operate. Similarly, before insurance coverage can be obtained for a new industry, standards are often needed in order to provide insurance providers with the level of certainty upon which actuarial calculations can be based.

Finally, the advent of consumer product safety laws and regulations and the judicial development of the concept of imposing strict liability for injury upon everyone in the distribution chain, from manufacturer to point of sale, has engendered strong economic reasons for manufacturers to build safe products, and for those downstream to carry products that are certified to be safe.

Representative nature: In a free society, anyone may vote, and anyone (subject to elementary requirements, such as citizenship and age) may run for elected office, allowing all voices to be heard -- at least theoretically. Typically, regional interests are also typically represented. Thus, although each party tries as hard as it can to play the system to its maximum advantage, a well-conceived government system will permit all interests to be heard, if not ultimately satisfied.

By definition, SDOs must be open to all who wish to participate, although those that do in fact choose to become involved may not be representative of all that have a stake in the final work product that an SDO may produce (consumers being the perennial example, due to lack of interest on their part). In the case of consortia, there is a greater propensity to structure membership classes to accommodate those that are expected to have an interest (e.g., vendors, government, academia, and commercial end-users), although there is frequently an inexpensive informational membership class available to individuals. Consortia also typically require higher membership fees than do SDOs from those that wish to have the greatest influence on the work product of the organization, since consortia garner almost 100% of their operating budget from membership dues, rather than from the sale of their standards.

Even though these differences between governments and SSOs are nominally significant, the results tend to be more similar than might otherwise be expected. This is due in large part to the fact that while governments may require compliance with law, the implementation of standards is voluntary. Hence, if a standard is not created by a representative group, it will be difficult to educate and inspire non-participants to adopt it, and if the SSO has not been successful in attracting a representative group of members, it is more likely that their work product will lack important features that are needed to ensure its final success in the marketplace. As a result, SSOs are well motivated to recruit a representative group of members as a way of achieving their ultimate goals, and to be mindful of the requirements of non-participants, if their adoption of resulting standards is crucial to success.

Process: Process is as important to the success of a law or standard as is the representative nature of the body that creates it. In order to have lasting utility, both laws and standards must be created through a process that is viewed by those that will be affected by the results to be fair, transparent and consistent. Where this is not true, the effort ultimately often fails, either eventually (in the case of laws, which can be repealed by future legislative sessions, or overturned in the courts) or immediately (as occurs in the case of voluntary standards, which may simply not be adopted at all.

At the same time, each system has its own shortcomings. In a legislature, the majority ultimately rules, and therefore even a nominally representative legislature can pass a law that favors one group at the expense of another, or even oppresses one group for the satisfaction or bias of the other. Still, governments act under the harsh light of public scrutiny, which tends to be a moderating factor (at least in a free society), and a well-constructed government will have checks and balances that help to restrict abuse by any single governmental body.

In SSOs, the situation is far different, although the result will generally be the same, through different dynamics. Most obviously, SSOs strive for consensus, since a standard that is not adopted even by its members is not likely to benefit those that carry a vote. As with attracting a representative membership, SSOs also need to employ a process that persuades would-be implementers (members and non-members alike) that they will be "safe" and better off implementing a standard than pursuing a proprietary alternative. If one member believes that another member is able to cheat successfully, then it will conclude that it is better off cheating as well, or perhaps ceasing to participate at all. In either case, the standard (and the SSO) is likely to ultimately fail. In order to avoid that result, a well-constructed and well-administered process is crucial.

Transparency: Both SSOs and governments derive a good measure of their legitimacy and influence from the degree of trust that inspire in the eyes of those that are impacted by their actions. A key element

in earning such trust in each system is by maintaining transparency in process and actions, as well as by accepting and considering public comments on work product that is in draft form.

In the case of SSOs, practice varies, with some operating entirely in full public view, and others limiting access to standards in process throughout part of the process as a privilege of membership (and an incentive to pay membership fees). At some point, however, an SSO will typically post a draft for public comment, and then consider all comments received to whatever extent it's rules provide.

Government operates under a much more formal process, with extensive rules regulating what must be where, when and how; what discussions will be held in open session; how and when transcripts are created and how they will be made available; how proposed regulations will be posted for comment and where, and so on. This legislative and regulatory record is not only relied upon as the process continues, but may be consulted later (and cited in court) to indicate what was the legislative intent where ambiguity is later found to exist.

Game Playing : Even when attention is paid to designing and administering a process that minimizes opportunities for abuse, both systems are sadly subject to game playing of various types. Procedurally, government has more mechanisms (both formal and informal) to facilitate such activity than do most SSOs, such as the ability to add unrelated “riders” to legislation in order to secure often wasteful appropriations for the home districts of individual senators and congressman. On the other hand, there are various forms of formal oversight over both the legislative and the rule making processes, as well as a broad and attentive public press.

The game playing within some SSOs (SDOs as well as consortia) can also become intense, including actions taken to ensure that a finally approved standard will require the payment of a royalty to a participant, either for implementing a standard, or for making practical use of a standard through the need to practice additional patented inventions. Such abuses of process may incur the ire of those directly involved, but rarely achieve wide attention or detailed reporting in the technical press, unless actual litigation ensues (as in the case of *Rambus v. Infineon*) or if the stakes are very high (as in the case of the Eolas patent cited against some aspects of the Microsoft Explorer browser).

Necessity of Compromise: Both the legislative process and the SSO consensus process often rely on compromises among those involved. In the case of government, the need for compromise can be absolute, where a law must be passed, or relative, where action (such as an Executive Order) does not require formal legislative approval, but the party in power's fortunes at the polls may suffer in the future, or when “pay back” on the floor of Congress on other initiatives may result from overplaying one's hand.

In the world of SSOs, the need for consensus is either formal (as in the SDOs' and consortia whose rules require it) or practical, as in those consortia that do not have such a formal rule, but operate in that fashion nonetheless in order to secure broad member adoption of the standards that the SSO develops.

But the distinctions between the two systems are also marked. There may be less horse-trading in many SSOs, and truly unrelated riders on standards are unknown. Similarly, most of those individuals that actually participate in SDOs (and virtually all of those that participate in consortia) do so as a function of a job that they already have. As a result, in contrast to the political system, how one votes in an SSO is unlikely to have any impact on one's future livelihood (assuming that a vote is cast in a manner consistent with critical aspects of the business strategy of one's business strategy).

Areas of difference: While various qualified differences have already been described, there are additional ways in which governments and SSOs are totally different, or nearly so. These include the following:

Mode of representation: To use classic terminology, democratic countries (such as the United States, France and Canada) are republics, while SSOs are Athenian democracies. What this means is that while the power of government derives from the governed in each case, that power is exercised by elected officials and representatives, and it is these individuals that create policy and vote on outcomes. In SSOs, this intermediate layer is eliminated at the technical voting level. Instead, those that have a

stake in an outcome and sufficient interest in affecting it are free (as were the citizens of Athens) to become directly involved in determining outcomes.

What the two systems share in common is that the success of an SSO is typically affected by its success in recruitment. If a sufficiently large and diverse membership is secured, then those that are directly involved tend to act as effective proxies for those that are not. Still, there is an important difference: being representative of an interest group as a factual matter is far different from being responsible to that group in an electoral sense, and outcomes may therefore be less predictable.

SSO outcomes may also be less broadly representative, since a representative in each system may be expected to act out of self-interest. In the governmental setting, that self-interest is reelection (a product of being responsible to her electors), while a representative in an SSO will act solely out of her employer's best interests, which may (or may not), for a variety of reasons, be representative of all other companies similarly situated. What saves the system in the case of an SSO is that the goal is wide adoption of the standard, and therefore the self-interest of the member, and the self-interest of non-involved stakeholders is often sufficiently aligned to produce the right result.

The great weakness in each system is not that too many players play to "win", but that too many players believe that winning means achieving their desired specific outcome, rather than an outcome that is most beneficial to all (in the case of governments) or most likely to be broadly adopted (in the case of SSOs).

Constituencies: Although SDOs are supposed to keep the interests of all stakeholders (involved and uninvolved alike) in mind – and many make a genuine effort to do so, as do a few consortia (such as the World Wide Web Consortium, or W3C) -- there is a broad gap between the governmental and SSO systems in this regard. Even with the best of intentions, it is hard to work actively in the interests of a group that has not chosen to participate. More seriously, under-representation of specific groups can occur by design (e.g., if recruiting efforts or fee structures are targeted at certain groups to the exclusion of others) or through negligence or lack of resources (e.g., for a consortium, when recruiting efforts beyond the national borders of the host country are weak).

The innate differences between the two systems that can lead to variations in serving all stakeholders are too numerous to mention, but would include the following: SSOs have limited recruiting budgets, and only the barest semblance of a Bill or Rights or Constitution that institutionalizes the rights of the individual or any specific interest group against the work of the SSO. At the same time, however, SSOs are more open than governments to direct participation by anyone that chooses to do so, [2](#) while a small interest group in a governmental system may find it almost impossible to be effectively heard.

Priority: One of the prime reasons that a given need is addressed within one system or the other is the priority that is placed upon that need by the participants in each potential venue. Thus, where a subject area is identified closely with a government's mission (e.g., health, safety, and creating public infrastructure), governments are likely to become involved, and even preempt the field (as in setting and allocating the telecommunications frequencies that are utilized by standards set by SSOs such as the IEEE). But government has many concerns to address, and its attention to setting standards (by law and regulation) is therefore severely limited. [3](#) Where a given need is relevant to only a small sector of society or industry, there must be a compelling reason why government should become involved.

The result is that, areas of overlap and intersection aside, there are relatively clear lines that separate where government takes the leading role and where it is content to be a follower. How this occurs on a nation by nation basis varies widely, with some countries (such as China) and regions (such as Europe) taking an active governmental interest, while others (such as the United States) play a very limited and episodic supporting role. [4](#)

The boundary between government and SSOs is not only one that is blurred, but also one that can be moved by circumstances and events. For example, in the area of professional or safety standards, when a scandal or tragedy leads to the public perception that private industry is doing an inadequate job of policing itself, government may be forced by public opinion to step in, either effectively, or (as in the case of the CANSPAM legislation) ineffectively. Similarly, the importance or strategic value of standards in a

given area may rise, leading government to assign a higher priority to an area going forward (the WSIS initiative to explore Internet “governance” issues is one such example).

Knowledge: Government is often at a distinct disadvantage to SSOs in many situations where standards need to be created by law or regulation. In some cases, large and knowledgeable government agencies already exist, with deep domain expertise (as in the case of securities regulation). But in others, as often is the case of trade policy when the United States is called upon by industry to assert U.S. rights and interests as a member of the World Trade Organization, it may find that it needs to turn to outside experts for education on arcane technical matters.

One result of this reality is the rise of the lobbyist: the professional that is paid to gain access to and “educate” influential legislators, but whose employer has an interest in advocating a particular result. When government makes too much use of lobbyists and expends too little effort on independent fact finding and contacting of disinterested experts, results suffer. SSOs provide one source of information for Congress that is representative of the views of industry broadly, rather than the self-interested advice of a single company with a large lobbying budget.

In contrast, the work of SSOs is typically staffed (at the technical level) with both dedicated and volunteer staff that are very knowledgeable, and that can therefore accurately understand both the need as well as craft an appropriate solution. On the other hand, SDOs are variously knowledgeable and able to support efforts (and consortia are typically clueless and inadequately funded) to influence or educate governments in order to advocate pursuing international standards-based strategies.

Unique capabilities: While SSOs can create standards, they have only limited abilities to persuade non-members to adopt them. This is, for the most part, a good thing, as it forces SSOs to offer quality and openness as incentives to adoption. Still, when international crises arise (as when China last year sought to require usage of a domestic wireless standard rather than the IEEE “Wi-Fi” standard) a government possesses powers of persuasion that no mere SSO can command. Similarly, although the CANSPAM law that was intended to abate the nuisance of junk email was structurally flawed from the outset, it is also likely that an effective response to spam, phishing and other abuses will ultimately only be achieved through coordinated international effort at the governmental level.

While governments mandate compliance with their laws, SSOs, for their part, can (at least at times) achieve broad industry buy-in, resulting in faster and more enthusiastic uptake of standards than might occur if the same requirements were established via the regulatory process. Also, the SSO process, while appearing slow to those that wish for instant gratification, is almost always more rapid than the tedious legislative process.

Strengths and weaknesses: Clearly, there are meaningful differences between the legislative and the consensus standards process. On a composite basis, some of the most notable may be summarized as follows:

Governmental: Laws and regulations are backed by the power of the state, meaning that uptake is generally assured, so long as enforcement is practical and government has the determination to put its resources behind assuring compliance. Governments also have domestic and international credibility and powers that SSOs do not, as well as rigidly transparent (and scrutinized) processes. Hence, the government venue is optimized for situations where: compliance cannot otherwise be assumed without the ability to levy penalties; the stakes are very high; compliance testing is expensive or burdensome; transparent, documented process is crucial; and/or international cooperation is required and not likely to automatically occur out of self-interest. However, the government process has a price: the legislative agenda is crowded, the process is slow, the outcome is unpredictable, and the costs of enforcement are great.

SSOs: Relative to government, SDOs in general, and consortia in particular, are very light-weight and inexpensive affairs. While the fully burdened cost of producing a single standard (when member travel and time costs are included) is still substantial, it is rapidly decreasing, as standard setting increasingly becomes an on-line activity. The relevance of any individual standard created by an SSO is also likely to

be far narrower than many matters typically addressed by a legislature. SSOs by their nature are therefore optimized for achieving relatively fast, cheap results that are of importance to specific interest groups (and that will not adversely impact other interest groups). While there can be needless duplication of effort between SSOs, there can also be concurrent beta testing of multiple new ideas and approaches in competing organizations, with the marketplace ultimately deciding which approach is preferable for what purpose (a luxury that the governmental process is not constructed to allow). [5](#)

SSOs also have the signal advantage of relying on consensus rather than the brute force of an “up or down” legislative vote. When the process works poorly, the result is a watered down, ineffective, ignored standard (which is still better than a watered down, ineffective – but nevertheless enforced – regulation). When the process works well, however, broad and rapid adoption follows.

Lessons to be learned: Neither process is ideal, and each system could productively borrow specific strategies and features from the other, as well as work with the other on a more advantageous basis. Here are some examples of such possibilities, based upon the observations made in this article:

- SSOs are typically far more successful at achieving voluntary, global buy-in than has been (for example) the United Nations in many cases. Similarly, the process of creating a standard is often more smooth and constructive than is the often adversarial process of constructing and passing legislation. Perhaps national governments and international treaty organizations could productively examine the consensus process to learn how to improve the success and speed of their own efforts.
- The most significant difference between SSOs, on the one hand, and governments and treaty organizations, on the other, is that the SSO process is based on creating standards that the members will *want* to implement, as compared to the political process, in which legislators and diplomats ultimately come up with a compromise that the legislators or treaty parties ultimately *agree* to respect. The result is that standards become adopted on their own merit, while laws and treaty obligations must be policed, and sometimes enforced. While certainly not all actions considered by governments are susceptible to consensus approval (that, after all, is one reason that we have governments), this does not mean that identifying those situations that are appropriate at an early stage would not be productive. The distinction to be made is that the SSO process assumes the need for consensus, while the legislative process assumes the need for a majority vote – and that makes all of the difference. In the United States, for example, the increasingly adversarial, “winner take all” atmosphere that currently exists in Congress ensures that consensus decisions will all too rarely be achieved.
- Government and industry sectors should maintain the type of closer working relationships that would enable high-level forward planning. By agreeing upon goals, and then establishing guidelines for allocating which tasks can most productively be achieved through the efforts and support of each system, better domestic results, and greater international influence, might be achieved (in this regard, the United States government could learn a great deal from the example presented by Europe). A first step in creating such a system could be to create a working group of representatives of SDOs, consortia, industry experts, and relevant government agencies that could make recommendations for creating such a system.
- Closer collaboration between SSOs and governments could allow government to make more effective and efficient use of SSO work product and knowledge. At the same time, such collaboration could provide SSOs with new avenues to increase uptake of that work product.
- While consortia play an increasingly important role in the United States technology-based economy, there is virtually no communication or collaboration between these hundreds of organizations and the U.S. Congress or agencies, nor any organization to act on their behalf, as does the American National Standards Institute (ANSI) on behalf of SDOs. The result is a near-total disconnect between the knowledge and activity base represented by consortia and the U.S. government. Only when individual companies act to bring a consortium standards-based situation to the attention of government does such a link become established.

- Minimal economic support from governments could greatly help in harmonizing SSO and government efforts in order to avoid needless duplication and to speed government awareness of available consensus standards. For example, there is a chronic (and increasing) need for a master registry of standards efforts in process, as well as completed standards and other work product. There is not sufficient will or resources within any existing SSO to create such a comprehensive resource today (although some more limited efforts are in process), but a government grant of modest proportions could easily reverse the situation.

Summary: Governments and SSOs share much in common – and each has distinct features, strengths and weaknesses not shared in full with the other. While there has always been cooperation and awareness between these two systems, closer study of the dynamics and attributes of each could lead to greater successes and strategies for each system and its stakeholders. Similarly, government agencies and legislative staff and SSOs should take greater interest in maintaining closer, and more collaborative, relationships to their mutual advantage. A first step in achieving a more efficient and productive relationship between government and SSOs in the United States would be to form a working group to study opportunities for change, and to make specific recommendations.

As standards become of ever greater societal and strategic importance in the future, the nation that most effectively optimizes the relationship between its legislative, regulatory and consensus based standards efforts will enjoy a competitive advantage in the global marketplace. Those that neglect to do so will suffer accordingly, as the margin for error between successful competition and unsuccessful efforts to remain competitive in the global marketplace becomes ever smaller.

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Endnotes

1. While the range of organizations that could fall under the general label “consortium” is broad, ranging from small, closed, self-selecting organizations to large, global associations that are indistinguishable from SDOs, for purposes of this article I define a consortium to be an organization that has all of the commonly accepted attributes of an organization that sets “open standards” (e.g., membership is available to all, there are clear and fair policies and procedures that are in fact followed, resulting specifications may be implemented by members and non-members alike under reasonable and non-discriminatory terms, and so on). There are hundreds of non-accredited organizations that meet this definition today.
2. A hopeful recent development in this regard is the decision by the W3C to encourage greater Third World participation through offering reduced membership fees to representatives of poorer nations.
3. It is in large part for this very reason that the thousands of SSOs that are in existence today originally came into being. With the advent of the modern industrial age, someone needed to decide how far apart the railroad rails would be, and how close together the screw threads. The eventual result was the creation of the modern, global consensus-based standards system. Luckily, the effort was a success, which explains why government and SSOs have evolved such a successful and symbiotic relationship.
4. For a detailed review of the United States role in supporting the consensus standards development process in an earlier issue of the Consortium Standards Bulletin, see: *A Work in Progress: Government Support in Standard Setting in the United States: 1980 – 2004*, Vol. IV, No. 1, January, 2005, at <http://www.consortiuminfo.org/bulletins/jan05.php#feature>. For a comparison of the United States and the Chinese approach in an earlier issue of the Consortium Standards Bulletin, see *The Yin and Yang of China’s Trade Strategy: Deploying an Aggressive Standards Strategy Under the WTO*. IV, No. 4, April 2005, at: <http://www.consortiuminfo.org/bulletins/apr05.php>

5. An excellent current example of this dynamic is demonstrated by the various wireless standards that have been, are, and doubtless will in the future continue to be proposed by one interest group or another. Some early competing standards have been abandoned (e.g., HomeRF), while others (such as Blue Tooth and Wi-Fi) have become established, but for the separate uses to which each is best suited. Presumably, this is a good result for the end-user, given that the marketplace was able to sort itself out effectively before many devices were purchased, and therefore few end-users were abandoned.