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WHAT IS AN 'OPEN STANDARD?'

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EDITOR'S NOTE:

Into the Lion's Den

Andrew Updegrove

A glance at the Standards Today archive tells me that this is the 69th issue of *Standards Today*, and also that December will mark this eJournal's tenth anniversary. Remarkably, in all that time, I have not tackled the question of "what is an open standard?" Till now.

Despite the nod and a wink title for this Editor's note, my neglect of this topic is not the result of a lack of nerve to tackle a controversial topic (though controversial it certainly is). Rather, reporting on the many definitions that have been proposed for this chimerical phrase seemed pointless while the consensus remained strong that there can and should be no one definition that would be appropriate in all settings.

That's all well and good, but lately governments around the world have taken a renewed interest in defining exactly what should constitute, at least for their purposes, 'open standards.' As a result, the time seemed right to finally venture into this particular lion's den to report on what's going on, and opine on why it matters.

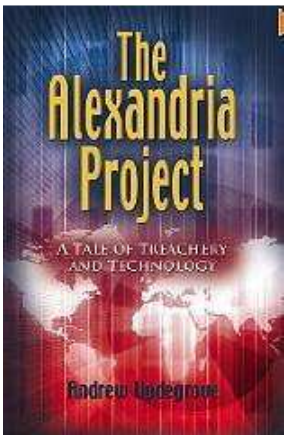
In this month's ***Editorial*** I open with a tip of the hat to the United Kingdom Cabinet Office, which has not only adopted a carefully crafted set of principles to guide its referencing of open standards in procurement, but has also devised an extremely clever mechanism for incentivizing vendors to implement those standards.

As my ***Feature Article***, I reproduce an expanded version of a paper I presented earlier this year at the First OpenForum Academy Conference, held in Brussels. In it, I survey the various traditional and modern norms of 'openness' that have evolved, as well as the results of the most recent efforts to define that term in the context of government procurement in Europe and the United States.

I follow the feature article with the ***Comments*** I submitted in response to a Federal Register notice posted by the Office of Management and Budget (OMB), which is considering whether to revise or issue additional guidance (or both) relating to its Circular A-119. OMB A-119 is the principal document instructing the government agencies that annually spend hundreds of billions of dollars in public funds procuring standards-compliant products. As currently written, OMB A-119 is at best vague, and at worst discriminatory, in its evaluation of consortium-developed standards in contrast to those developed by traditional standards organizations. In my comments I highlight these deficiencies, and also propose curative actions that should be taken to address them.

In my ***Standards Blog*** selection for this month, I take a look at yet another current effort to grapple with openness in standards development. In it, I focus on the recent decision of five of the standards organizations most responsible for bringing us the Internet and the Web to propose their own definition of openness, and on what might have led them to do so.

As usual, I then switch to a different theme. As you may be aware, the rise of self-publishing is creating upheaval in the world of both physical and on-line publishing. To the good, books once doomed to rapid consignment to the hopeless netherworld of 'out of print' are once again available, and the number of new books has exploded. To the bad, there is more chaos than value to be found in this New World Order of publishing, a topic I explore in my occasional series titled ***Monday Witness***.



In a related vein, a look at the archive of Standards Today issues reminds me, painfully, that its production has suffered sorely over the last two years as I have pursued other authoring adventures – specifically, the writing of a cybersecurity thriller called ***The Alexandria Project*****.** I've included the Prologue in this issue, and you can purchase the complete book in paper and eBook formats at Amazon, Barnes & Noble, iTunes and elsewhere. If you know someone that loves a good thriller, may I be so bold as to suggest that you would bring them (and certainly me) much joy this holiday season if you would give them a copy.

Finally, in grateful recognition of the close of a long and often bewildering campaign season here in the United States, I offer in my ***Consider This*** essay a theory to explain how so many otherwise intelligent people can disagree so completely and energetically on so many different topics.

As always, I hope you enjoy this issue. But either way, it's always great to hear what you think. Let me know, why don't you? My email address is andrew.updegrove@gesmer.com

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Editor and Publisher
2005 ANSI President's
Award for Journalism

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EDITORIAL:

The U.K. Cabinet Office Solves the Open Standards Policy Conundrum

Andrew Updegrove

Governments certainly have more than enough to concern themselves with these days – financial crises, natural disasters and terrorism, to name just a few. Given that's the case, it's surprising that so many are finding the time to worry about the kind of standards with which the products and services they purchase comply. But they are.

That's the case in the EU, where the final terms of version 2.0 of the European Interoperability Framework (EIF) were the subject of heated debate, resulting in a watered-down definition of what should be regarded as acceptable standards for enabling communications between EU member nations. It's also the case within those EU member states that are considering adopting definitions similar to the formulation that appeared in the original, 2004 version of the EIF.

In an elegant bit of definitional creativity, the United Kingdom Cabinet Office has come up with an answer

It's somewhat ironic that this discussion is occurring not in the context of standards generally, but with respect to information technology (IT) standards, where the standards of greatest concern are those that enable interoperability. I say ironic, because once a standard has become universally adopted in the marketplace, customers – including governments – have little choice but to adopt it as well, because interoperability standards not only enable government IT systems to interact with each other, but also with the citizenry. Moreover, one great economic benefit that can be gained from procuring products and services that comply with widely adopted standards is that this practice protects the purchaser from becoming locked in to the proprietary products and services of individual vendors.

In some cases, there's a public policy as well as an economic concern: governments everywhere are seeking to move as many citizen-facing services and information on to the Internet, because more services can be provided more conveniently to more people at a far lower cost than on a face-to-face basis. But that can only happen where citizens can afford computers and Internet connections, and if the computers and software they choose to purchase can, in turn, interoperate with government systems.

This new, electronic relationship between the public and private sectors raises standards policy considerations that never existed before. Can the standards required by government procurement officers be implemented for free, and if not, do they significantly drive up the cost of accessing government resources? And were the processes under which these standards developed truly open, allowing the best technology to rise to the fore, or were they manipulated by proprietary vendors to serve their own interests to the exclusion of other classes of stakeholders?

The words that have traditionally been used to define technical specifications that have been developed in such a way as to address these concerns are 'open standards,' implying openness in not only the process under which the standard was created, but also the transparency of that process, and ensuring the availability of any patented technology

necessary to implement the standard on fair and reasonable, non-discriminatory (FRAND, or in the U.S. just RAND) terms. To truly level the playing field among vendors, many now advocate that a proper definition of open information and communications technology (ICT) standards should include the ability to implement the standard in both open source software as well as in proprietary products, and preclude a requirement to pay royalties or other fees to owners of any patent claims that would be unavoidably infringed by a compliant implementation (Essential Claims).

As noted earlier, the great quandary for both procurement officers and policy makers alike has been how relevant an openness definition can really be. After all, in the case of interoperability standards, selecting an open standard where the rest of the market has already unanimously adopted a less open standard would be an exercise in futility, since interoperability could only be easily achieved among government systems, and not between government systems and the rest of the world.

As a result, every definition of openness that has been incorporated into any government procurement rules to date has contained an exception that frequently swallows the rule: to wit, an open standard (however defined) must be specified in procurement unless it would be impractical to do so. The result is that, even given the vast purchasing powers of governments, the adoption of an openness definition will have no effect on the future behavior of either the standards setting organizations that create standards, or on the vendors that that use them.

Until now.

In an elegant bit of definitional creativity, the United Kingdom Cabinet Office has come up with an answer to this conundrum. The achievement can be found in a document titled Open Standards Principles: For software interoperability, data and document formats in government IT specifications. What the authors have pulled off involves a bit of clever time travel, transferring the costs of later breaking the hold of a proprietary vendor back to the initial bidding process, and grossing up the vendor's bid accordingly.

In other words, when an IT contract is put out for bid, a respondent that does not intend to deliver products that comply with 'open standards,' as defined by the Principles, must include a fair estimate of the government's later switching costs into the vendor's initial bid, as if those costs would need to be paid at the time of procurement rather at the time of product replacement. The result is that a vendor responding with a bid to provide products compliant with open standards would be at a substantial advantage to a vendor offering only its own proprietary offerings.

Moreover, the definition of open standards included is the kind that precludes charging for Essential Claims or inclusion of licensing terms that would preclude implementation in open source software.

The elegance of the approach is that it provides proprietary vendors that have to date provided only half-way compliance with open standards - or (worse) that have locked in their customers by adding proprietary extensions to existing standards - with immediate incentives to fully comply with the type of standards that are most effective to avoid vendor lock in.

The Foreword to the Principles makes no attempt to disguise the fact that breaking the hold of large, proprietary vendors on government customers was a major goal in crafting the Principles, while at the same time creating more commercial opportunities for small and medium size businesses.

As one might imagine, the public comment period that preceded the release of the final version of the Principles attracted a broad and energetic range of responses. All of this input was taken into account, but despite substantial pressure from some commercial interests, the Cabinet Office held firm on its key terms.

Clever though the Cabinet Office's gambit may be, it will not immediately solve all aspects of the openness/interoperability conundrum, since the switching cost provisions of the new procurement rules relate primarily to new purchases. Moreover, while the Principles may move some vendors to fully comply with interoperability standards that already exist, they will not, without more, influence the marketplace to create future standards that meet the process and economic terms of the British open standards definition.

But if the Principles are adopted by the procurement offices of other nations, then something truly interesting will begin to occur. That's because more than one SSO often has the technical competence to develop the same standard, and new SSOs are being formed on a weekly basis. For many years, vendors seeking to have a new standard have often based their decision to choose one SSO over another (or to form a new SSO) based upon the intellectual property rights (IPR) policies of the available alternatives. The global government procurement market is enormous, providing ample motivation to vendors in making such decisions, and to SSOs competing for that work.

Given that a growing number of existing and new SSOs have already moved towards compliance with most or all of the rules included in the Principles independently, governments that decide to follow the lead of the U.K. can expect to finally have a real, forward-looking impact on the rules and processes under which standards are created, and the terms upon which the technology underlying those standards will be made available.

And the timing is good. Within the past few months, both US and EC regulators have made it known that they wish to see SSO IPR policy rules change in order to minimize the potential for the sort of multi-billion dollar waves of litigation that are currently sweeping the globe involving 'standards essential patents' used in mobile devices. SSOs across the board will need to give attention to amending their policies, providing a convenient opportunity to consider bringing them into compliance with the Cabinet Office's Principles as well.

Will that happen? It's too early to tell. But if the Federal Trade Commission, in the US, and the European Commission wanted to give the marketplace a nudge in that direction, the openness conundrum in standards development could rapidly become a dilemma of the past.

FEATURE ARTICLE:

Openness and Legitimacy in Standards Development

Andrew Updegrove

Abstract: *Consensus regarding which specifications can rightfully claim to be 'open standards' has been notably difficult to achieve in recent times. Usually, the question is academic, but when governments restrict their very substantial purchasing power to the acquisition of products and services implementing only such standards, then the selection of openness criteria can become contentious. In this article, I review the norms of openness observed by traditional SDOs and modern consortia in light of their standards-related goals, and traditional as well as cutting edge definitions of openness to be found in a variety of modern national government, international treaty, and private sector settings.*[1]

There is perhaps no phrase in standards development less susceptible to a common definition than the deceptively simple words, 'open standards.' A commonly expressed industry sentiment is that there can, and should, be no such common definition, and in particular when it comes to the rules relating to intellectual property rights that an organization may choose to apply to its standards development process. Instead, it is said, 'openness' should be understood as a situation-specific waypoint located along a spectrum of multiple attributes and process requirements. Utilizing such a relativistic approach permits a balancing of factors in any given case, such as sectoral norms, stakeholder requirements and market demands, to determine which processes and rules are essential and which might be superfluous, and even damaging. Even then, the list of elements that might (or in another person's opinion, might not) qualify as requirements can be lengthy and the related discussions contentious.[2]

Differences in definitions for open standards might be accepted simply as an example of healthy market-based competition among business models (which indeed they are), but for the fact that such definitions can be used to establish legitimacy in the eyes of third parties, and especially legitimacy for purposes of trade regulation and government procurement. If openness becomes a factor (as it has) in defining what standards do and do not qualify under relevant laws, regulations or international treaties, then the definition used necessarily takes on significant importance for commercial interests, and often for consumers and citizens as well.

In this article I will briefly review the historical evolution of open standards definitions, the manners in which they have become legally significant, and finally, current developments nationally, regionally and globally that touch upon this issue.

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[1] An earlier version of this paper, lacking the section on the recently announced U.K. Cabinet Office Open Standards Principles and policy comparison table, was submitted to the First OpenForum Academy Conference, held in Brussels on September 24, 2012. The collected papers can be accessed here: http://www.openforumacademy.org/library/ofa-research/first-conference-proceedingsA4.pdf. All Web pages cited were last accessed on November 25, 2012.

[2] A frequently cited (and extensive) list of attributes of openness has been assembled by Ken Krechmer. *See*, The Meaning of Open Standards, *The International Journal of IT Standards and Standardization Research*, Vol. 4 No. 1, January - June 2006, available at http://www.csrstds.com/openstds.pdf. Krechmer proposes that openness requirements should be assessed from the differing viewpoints of implementers and users as well as creators of standards, and then identifies ten categories under which openness criteria can be identified and organized.

History of openness principles: The history of standards development in the modern era can be roughly divided into two periods. The first began in the late 19th century, and resulted in the gradual evolution of a two-tier, global development and acceptance infrastructure. The first tier was made up of national standards development organizations (SDOs), which were in turn represented in the second tier, comprising a small number of global non-government and treaty organizations, including the 'Big Is' (ISO, IEC and ITU), within which the majority of internationally recognized standards were evaluated and adopted. In the course of this evolution, a set of values and process expectations evolved that were agreed to represent baseline principles necessary to establish the legitimacy of the SDO, entitling its standards to be considered for acceptance on a global basis. These principles included process-oriented values such as accessibility to all affected stakeholders and transparency to non-participants, as well as fair competition concepts, such as the obligation to make available to all standards implementers any embedded intellectual property rights (principally patents) on fair, reasonable and non-discriminatory (FRAND) terms.

Each of these lofty principles was articulated in only a few words. Various supporting processes were designed at the national level to live up to the principles. The resulting activities were not supervised by the Big Is, because these organizations had no authority to review actions in member nations, no remit to accept appeals, and no powers of enforcement in the case of a failure by a member to adhere to standards of openness (a state of affairs that continues to exist today). But still, there was consensus on the principles, and consensus was, after all, one of the primary process values of the principles themselves.

The second era began in the early 1980s with the rise in the information technology (IT) sector of what are sometimes referred to as fora, alliances, or special interest groups (SIGs), but which today are most commonly referred to as consortia. These initiatives represented a move by industry to 'opt out' of the traditional SDO system, in part to assert more control, in part to limit development activities to their commercial peers, and in part to move more quickly from concept to standards implemented in actual products.

While vendors had always been the most directly interested and numerous participants in SDOs, companies in the rapidly evolving field of computer technology increasingly chaffed under the often glacial process of the SDOs, encumbered in part by the delays that requirements to achieve consensus and to provide a right of appeal imposed, especially when enabled through procedural steps in a pre-Internet world dependent on face to face meetings and surface mail. Over time, the great majority of information technology, and to a lesser extent communications technology, vendors opted out of the world of SDOs as their venue of choice for standards development. In a rather Orwellian sense, the animals in the land of information and communications technology (ICT) had evicted the farmers, and taken over the farm.

These new consortia were typically narrow in focus (often developing a single standard), industry driven, and (if they so desired) unencumbered by the principles of the past. They were also vigorously goal-oriented – seeking wide spread adoption of a standard rather than simply its development. Accordingly, they took on such additional activities as might be necessary in the given case to achieve that goal, including promotion, test suite development, certification and branding programs, and much more.

But over time, a strange process began to unfold: the animals began to look more like the farmers as some consortia broadened their scope, and others were founded to serve as centers of development in their self-assigned domains, becoming not unlike the many scores of SDOs formed in the U.S., each serving the standards needs of a discrete market sector. Unlike the traditional SDOs, however, consortia almost always aspired to

international membership, and to the direct adoption of their standards on a global basis. Most significantly for current purposes, consortia also started to adopt most (but not all) of the same principles that had become normative in the traditional world of standards development.

That this should occur is not surprising. While traditional principles, as a lawyer might observe, 'sound in equity,' in fact, they are equally justifiable from the perspective of self-interest, because standards uptake is by definition voluntary (except when a standard is referenced into law). Absent the kind of market power in a standards development group that leaves the marketplace no choice but to adopt, consortia as well as SDOs are wise to pledge allegiance to, and also implement, the type of process and procedures that can assure everyone that they would be safer and smarter to participate in the development and adoption of a new standard than to stand aside and reject the specification in question.

An excellent way to convince competitors that a given initiative represents an opportunity rather than a threat can be found in honoring and implementing principles such as open participation (so that all can affect the result) and transparency (so that all can see that games are not being played, and expose them if they are). So it came to pass that those who formed consortia began to consciously design their governance structures and processes to demonstrate and guarantee that these principles would be protected in the breach.

That said, a one to one correspondence did not come to exist between the principles espoused by SDOs and those that guide consortia. For example, in SDOs, achieving consensus typically involves recording, responding to, and reconciling objections of dissenting participants in a working group, and a formal appeals process. Consortia, true to the original goals of their creators, are likely to adopt more agile, real time (rather than necessarily sequential, and therefore time consuming) mechanisms that nonetheless satisfy member-perceived requirements for due process.

Moreover, over time additional developments in the ICT sector introduced new standards-relevant differentiators from the traditional standards development sector, and this process has accelerated. Chief among them have been the advent of the Internet and the Web, each supported by a strong culture of 'free,' the rise of open source software (often made available under license terms incompatible with RAND declarations), and a remarkable convergence of technologies in laptops and mobile devices, resulting not uncommonly in the implementation of many hundreds of standards in a single device.[3] The market-based expectations resulting from these developments have led many consortia to alter their intellectual property rights (IPR) rules and processes in response.

Trade Regulation and Government Procurement: At the same time that matters were changing at both traditional and modern setting organizations (SSOs), long-developed rules were coming under stress within government circles as well.

Perhaps not surprisingly, these rules initially recapitulated the principles of openness that had evolved within the traditional world of SDOs, and not the ever-changing landscape upon which consortia are active. Indeed, when there were only 'de facto' standards owned by individual companies and many 'de jure' standards owned by SDOs, it was easier for governments to simply require the implementation of standards developed by SDOs than to delve into definitions of openness.

[3] Brad Biddle, with co-authors Sean Wood and Andrew White, has concluded that a typical laptop implements at least 251 interoperability standards alone, with the total number of included standards of all types being far higher. See, How Many Standards in a Laptop? (and other Empirical Questions), available at: http://standardslaw.org/How_Many_Standards.pdf.

Europe: This was the route pursued in the European Union, where the only standards eligible for referencing in government procurement came from recognized global SDOs, such as the Big Is, and Europe's own regional SDOs (CEN, CENELEC and ETSI, organizations developing 'European Standards' under mandates from the EU). In recent years in the ICT sector, however, it has become clear that a rigid commitment to such a rule flies in the face of reality, given the pervasiveness of consortium-developed standards in most key areas of ICT.

This uncomfortable truth was recognized in one of the ten recommendations made in the 2010 Report of the Export Panel for the Review of the European Standardization System (ESS), which stated that:

> . . . in many areas there is pressure for fora and consortia specifications to be 'recognized' in some way, and to facilitate the uptake of such specifications in a public policy or public procurement context. It is proposed that… the ESS will ensure that it has the improved mechanisms to interact with fora and consortia and ensure that the best standards are adopted appropriately.

Since the date of this report, the EU has moved (not without much *sturm und drang*) gradually in this direction, and on September 11, 2012, the European Parliament overwhelmingly approved the adoption of regulations intended to give EU firms:

> . . . access to standard solutions to technical problems, enabling them to cut production costs, help spread best practice, boost competitiveness and drive growth under a new deal. . . . to modernise the development process for EU standards.[4]

The regulations will also officially permit consortium-developed and other 'non-formal' standards to be given consideration in addition to European and ISO/IEC/ITU standards.[5]

Meanwhile, a more long-standing debate regarding the use of standards by government continues in Europe, this one focusing expressly on 'openness.' This dialogue was occasioned by the development by the European Commission of a European Interoperability Framework (EIF) for Pan-European eGovernment Services, the first version of which was released in 2004.[6] The reason that standards were to be addressed in this context relates to the purpose of the Framework: to "support the delivery of pan-European eGovernment services to citizens and enterprises." Issues such as accessibility (both physical and economic) and technology neutrality were therefore recognized as being of special concern.

The first version of the Framework adopted the use of 'Open Standards' as an underlying principle, and established four 'minimal characteristics' for such standards:

- The standard is adopted and will be maintained by a not-for-profit organisation, and its ongoing development occurs on the basis of an open decision-making procedure available to all interested parties (consensus or majority decision etc.).

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[4] European Parliament press release, "Delivering standards faster to drive growth," September 11, 2012, available at: http://www.europarl.europa.eu/news/en/pressroom/content/20120907IPR50816/html/Delivering-standards-faster-to-drive-growth.

[5] Or, as the press release rather elliptically phrased it, "Thanks to the new rules, European standards will also be better plugged into the international standardisation system,…"

[6] Available at: http://ec.europa.eu/idabc/servlets/Docd552.pdf?id=19529.

- The standard has been published and the standard specification document is available either freely or at a nominal charge. It must be permissible to all to copy, distribute and use it for no fee or at a nominal fee.

- The intellectual property - i.e. patents possibly present - of (parts of) the standard is made irrevocably available on a royalty free basis.

- There are no constraints on the re-use of the standard.[7]

This definition was notable – and controversial – for a variety of reasons. First, it expressed no preference for the output of SDOs over consortia. Second, it acknowledged that some traditional indicia of openness might not be uniquely desirable after all (e.g., majority voting could be an acceptable alternative to consensus). Next, it cut to the root of the largest source of income upon which many SDOs rely (SDOs typically charge a significant fee to purchase a single, non-distributable copy of their standards; virtually all consortia, on the other hand, make their standards available for free). Lastly, and most controversially, owners of patent claims that would be necessarily infringed by implementation of a standard would be barred from charging a royalty.

Following aggressive lobbying by multiple constituencies, the definition was substantially diluted in Version 2.0 of the Framework (now titled the European Framework for European public Services), which was released in December, 2010.[8] In this version, the EIF no longer speaks in terms of minimum requirements at all, nor does it include the use of Open Standards as an 'underlying principle' (although values such as openness and transparency do apply with respect to the Framework generally). Instead, it only observes that, "[t]he level of openness of a formalised specification is an important element in determining the possibility of sharing and reusing software components implementing that specification," and noting that:

> If the openness principle is applied in full:
>
> - All stakeholders have the same possibility of contributing to the development of the specification and public review is part of the decision-making process;
>
> - The specification is available for everybody to study;
>
> - Intellectual property rights related to the specification are licensed on FRAND terms or on a royalty-free basis in a way that allows implementation in both proprietary and open source software.
>
> . . . However, public administrations may decide to use less open specifications, if open specifications do not exist or do not meet functional interoperability needs.[9]

The single remaining Recommendation (number 22) in EIF 2.0 that mentions 'open standards' (as compared to simply 'specifications') reads as follows: "When establishing European public services, public administrations should prefer open specifications, taking due account of the coverage of functional needs, maturity and market support."[10]

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[7] European Interoperability Framework for Pan-European eGovernment Services, European Commission, IDABC, 2004, available at: http://ec.europa.eu/idabc/servlets/Docd552.pdf?id=19529

[8] Available at: http://ec.europa.eu/isa/documents/isa_annex_ii_eif_en.pdf.

[9] EIF 2.0, Section 5.2.1.

[10] For a more in depth analysis of the changes between the two versions of the EIF, see, Updegrove, Andrew, EC Takes One Step Forward, Two Steps Back, ConsortiumInfo.org Standards Blog (December 21, 2010), at: http://www.consortiuminfo.org/standardsblog/article.php?story=20101221084910541.

Nevertheless, even in its current, diluted form, the absence of any reference at all to Big I standards is remarkable, given the equally vigorous debate that is still ongoing in the EU regarding the legitimacy of SDO vs. consortium-developed standards in public procurement generally, more than eight years after the release of the initial version of the EIF.

U.K. Cabinet Office: While the European Union as a whole was moving towards implementing the final form of EIF 2.0, a number of individual member nations were proceeding to develop domestic procurement rules that built upon the foundation laid by the European Union's EIF 1.0. One of the first to complete such a definition was the United Kingdom Cabinet Office, which on November 1, 2012 issued its "Open Standards Principles: For software interoperability, data and document formats in government IT specifications," which is binding on all government bodies, and took immediate effect.[11]

The definition of open standards that appears in an Annex to the Principles reads as follows:

> Open standards for software interoperability, data and document formats, which exhibit all of the following criteria, are considered consistent with this policy:
>
> **Collaboration** - the standard is maintained through a collaborative decision-making process that is consensus based and independent of any individual supplier. Involvement in the development and maintenance of the standard is accessible to all interested parties.
>
> **Transparency** - the decision-making process is transparent and a publicly accessible review by subject matter experts is part of the process.
>
> **Due process** - the standard is adopted by a specification or standardisation organisation, or a forum or consortium[1] with a feedback and ratification process to ensure quality.
>
> **Fair access** - the standard is published, thoroughly documented and publicly available at zero or low cost[2].
>
> **Market support** - other than in the context of creating innovative solutions, the standard is mature, supported by the market and demonstrates platform, application and vendor independence.
>
> **Rights** - rights essential to implementation of the standard, and for interfacing with other implementations which have adopted that same standard, are licensed on a royalty free basis that is compatible with both open source[3] and proprietary licensed solutions. These rights should be irrevocable unless there is a breach of licence conditions.
>
> 1. The European Regulation enabling specification of fora or consortia standards will enter into force 20 days after its publication in the EU Official Journal and will apply directly in all EU member states from 1 January 2013 see: http://register.consilium.europa.eu/pdf/en/12/pe00/pe00032.en12.pdf.
> 2. Zero cost is preferred but this should be considered on a case by case basis as part of the selection process. Cost should not be prohibitive or likely to cause a barrier to a level playing field.

[11] Available at: http://www.cabinetoffice.gov.uk/sites/default/files/resources/Open-Standards-Principles-FINAL.pdf The government of Portugal adopted a less detailed definition in a law made effective on June 21, 2011, available in unofficial translation at: http://www.esop.pt/uploads/2011/10/OpenStandardsPT.pdf.

While much of the definition is typical and traditional, other aspects stand out. Most notable are the following features:

- ✓ The explicit concern with avoiding dominance by a single vendor;
- ✓ The requirement that all necessary intellectual property rights be available on a royalty free basis, and also under terms that permit implementation under all recognized open source licenses; and
- ✓ The explicit recognition that consortium standards are equally acceptable with those created by traditional SSOs, so long as these organization have appropriate rules and processes.

This definition supports a carefully thought through and publicly vetted set of Principles. These Principles explain the standards-related public procurement goals that the policy is to achieve; the manner in which appropriate standards will be selected; the obligations that will now bind government bodies to implement those standards; and the penalties for failing to do so.

The Principles were created in furtherance of a Government ICT Strategy adopted in March of 2011, which reads in part as follows:

> 36. The Government will create a common and secure ICT infrastructure based on a suite of agreed, open standards which will be published and updated. The use of common standards can make ICT solutions fully interoperable to allow for reuse, sharing and scalability across organisational boundaries into local delivery chains. The adoption of compulsory open standards will help government to avoid lengthy vendor lock-in, allowing the transfer of services or suppliers without excessive transition costs, loss of data or significant functionality. . . .
>
> 39. The Government believes that citizens should be able to read government documents with the standardised document format reader of their choice. The first wave of compulsory open standards will determine, through open consultation, the relevant open standard for all government documents.[12]

Not surprisingly, the adoption of the Government ICT Strategy was noted by the major vendors in the technology industry, not all of which were pleased. As the Cabinet Office moved forward, its postings were met with a spirited response, both pro and con. An initial informal survey, posted from February 25 to May 20, 2011, elicited more than 970 responses on a lengthy survey that focused on three over arching topics:

- ✓ The open standards definition;
- ✓ The open standards that should be a priority for the Government to consider; and
- ✓ Whether particular standards should be mandated, recommended or avoided.

[12] Available at: http://www.cabinetoffice.gov.uk/content/government-ict-strategy.

A formal public consultation supported by an on-line site as well roundtable discussions ran from February 9 to June 4, 2012, and garnered a further 480 responses of varying types.[13]

Despite resistance from some individual information technology corporations as well as trade groups (e.g., the Business Software Alliance), the Cabinet Office held firm. In a Foreword to the Principles document, Francis Maude, Minister for the Cabinet Office and Paymaster General stated in part:

> Government IT must be open - open to the people and organisations that use our services and open to any provider, regardless of their size.
>
> We currently have many small, separate platforms operating across disconnected departments and IT that is tied into monolithic contracts. We need to have a platform for government that allows us to share appropriate data effectively and that gives us flexibility and choice.
>
> . . . . The publication of the Open Standards Principles is a fundamental step towards achieving a level playing field for open source and proprietary software and breaking our IT into smaller, more manageable components.

The Principles themselves make for an interesting read, reflecting a mix of pragmatic, economic, civic and aspirational concerns:

1. We place the needs of our users at the heart of our standards choices
2. Our selected open standards will enable suppliers to compete on a level playing field
3. Our standards choices support flexibility and change
4. We adopt open standards that support sustainable cost
5. Our decisions on standards selection are well informed
6. We select open standards using fair and transparent processes
7. We are fair and transparent in the specification and implementation of open standards

Each Principle is accompanied by a slightly expanded Statement, a detailed Rationale, and a list of specific Implications. For example, the first Principle is restated as follows:

> Government IT specifications are based on user needs, expressed in terms of capabilities with associated open standards for software interoperability, data and document formats.

The Rationale section that follows specifically expands on Paragraph 39 of the Government ICT Strategy, stating in part as follows:

> Citizens, businesses and delivery partners must be able to interact with the Government, exchanging appropriately formatted information/data using the software package of their choice. They must not have costs imposed

[13] The comments received, and the Cabinet Office response (each in multiple formats) are available at: http://www.cabinetoffice.gov.uk/resource-library/open-standards-consultation-documents. The Government's response provides a detailed summary and cross section of the comments received as well as high level reactions to the comments.

upon them, or be digitally excluded by the IT choices which the Government makes, beyond those which may reasonably be associated with accessing digitally provided services (i.e. internet access).

The related Implications expand on this theme as follows:

- ✓ The product choice made by a government body must not force other users, delivery partners or government bodies, to buy the same product e.g. web-based applications must work equally well with a range of standards-compliant browsers, irrespective of operating system, and not tie the user to a single browser or desktop solution.

- ✓ Government bodies must not impose undue cost on citizens and businesses due to the standards choices made in government IT specifications.

- ✓ . . . Government bodies must not specify particular brands or products.

Although the Principles recognize that there will not be an open standard for every purpose, they place the onus on the procuring or internally developing government body to justify any failure to purchase or develop technology that does not comply with open standards, requiring a "robust and transparent reason" (in one Implication Statement) and "a clear business need why an open standard is inappropriate and an exemption has been agreed" in another.[14]

The Principles are intended to gradually convert all government systems to compliance, and to make it very difficult for individual agencies and bodies to avoid toeing the line. Further to this goal, Implications under Principle 4 include the following:

- ✓ For all new government IT expenditure (for new systems or extensions to existing systems), government bodies must specify compulsory open standards (or open standards profiles) for use within common government contexts. This may be subject to exceptional case-by-case exemption if agreed in advance by the Government's Senior Responsible Owner (SRO) for open standards (or through Departmental Accounting Officer procedures for cases below the Cabinet Office spend controls threshold for IT).

- ✓ The Departmental Accounting Officer in a government body must be accountable for approval of any exception to the open standards policy in specifications for projects below the Cabinet Office IT spend controls threshold.

- ✓ Government bodies must perform an economic appraisal for each request for an exemption as part of a comply or explain process.

- ✓ For government bodies that are identified as not adhering to the Open Standards Principles (e.g. through transparent reporting or spend controls cases), Cabinet Office may consider lowering the threshold for IT spend controls until alignment is demonstrated.[15]

[14] Principles, p. 10.
[15] Principles, p. 16.

In short, not only must a government body apply for case-by-case exemptions, but it can face reductions in its budget if it is found to be dragging its heels in implementing the Principles.

Perhaps most intriguingly, the Principles include a mechanism for actively discouraging vendors from responding to bids with proposed solutions that do not implement approved open standards. Specifically, one of the Implications to Principle 4 reads as follows:

> As part of examining the total cost of ownership of a government IT solution, the costs of exit for a component should be estimated at the start of implementation. As unlocking costs are identified, these must be associated with the incumbent supplier/system and not be associated with cost of new IT projects.

In other words, if a vendor's bid on a project includes proprietary, rather than interoperable, products, the costs of later switching to open standards compliant products must be added to the bid for purposes of comparing it with competing bids of other vendors. This places the proprietary vendor at a bidding disadvantage, and helps protect the government body from the economic effects of lock in, as it will either have picked the open system to begin with, or will have purchased the proprietary system at a sufficient discount from the open system to offset later switching costs.

Going forward, the Principles charge appropriate and knowledgeable personnel with creating frameworks of 'core' open standards intended to assure open competition and lowest costs of ownership, as well as honoring public accessibility concerns. The transparency of the process by which these standards are agreed upon is assured via a Cabinet Office Standards Hub, which is styled as, "the 'front door' through which you can contribute to the process for prioritising and adopting open standards in Government."[16] At the same time, the Standards Hub process is charged with making an economic analysis of the effects of adopting an open standard or standards-based profile before recommending it for compulsory use.[17]

Principle 5 ("Our decisions on standards selection are well informed") is followed by a lengthy list of Implications which address how open standards are to be selected and maintained. These Implications take into account security, EU regulatory, legal, and many other concerns. Among other mechanisms, they call for the development of reference implementations where necessary, training, and the creation of an Open Standards Board to advise the Cabinet Office on the selection of compulsory standards. The members of that board are to be, "selected form a group of industry, professional, developer and academic volunteers who have demonstrated implementation, standards setting or strategic leadership in the field." The board is to be chaired by the "Government's senior responsible owner for open standards," and further panels of experts, as needed, will support its efforts.

Principle 6 provides that the process must be open, transparent, and implemented through the public Standards Hub Web site, while Principle 7 requires that all exceptions and exemptions, as well as any extensions to open standards, must be similarly public.

World Trade Organization: A quite different approach is taken under the WTO's Agreement on Technical Barriers to Trade (TBT Agreement).[18] This is hardly surprising, because the TBT Agreement is focused on preventing standards-based trade

[16] Principles, pp. 13-14.
[17] Principles, p. 16.
[18] Available at: http://www.wto.org/english/docs_e/legal_e/17-tbt.pdf.

gamesmanship, rather than raising the bar of standards development. The primary standards-related directive, found in Article 2, Section 2.4 reads as follows:

> Where technical regulations are required and relevant international standards exist or their completion is imminent, Members shall use them, or the relevant parts of them, as a basis for their technical regulations except when such international standards or relevant parts would be an ineffective or inappropriate means for the fulfillment of the legitimate objectives pursued . . . .

Article 4 of the Act requires that the domestic SDOs of signatory nations must, "adopt and comply with" a Code of Good Practice that is appended to the TBT Agreement as Annex 3. The terms of the Code of Good Practice do include some requirements relating to open participation and transparency, but the context makes it clear that the intention relates not to values-based principles, but to drive national efforts towards, "harmonizing standards on as wide a basis as possible." Perhaps due to the focus of the WTO on actions by signatory parties, the requirements of the main text of the TBT Agreement as well as that of the Annex, are addressed only to SDOs that are national or regional in scope. Global consortia are therefore definitionally excluded as objects of national signatory obligations.

Lastly, it should be noted that the TBT Agreement speaks only of 'international standards' rather than referring to the origin of such standards. In other words, the WTO takes a substantially neutral position on how standards are created, except to the extent that their mode of creation leads to a harmonized global marketplace. The TBT Agreement is also silent with respect to whether the Code of Good Practices should be adopted by consortia, although standards that have achieved global adoption would appear to enjoy equal status under the TBT Agreement, whether developed by SDOs or consortia.

United States: The American approach to procurement regulations is at once more granular relating to the definition of open standards than EIF 2.0 and similarly tepid regarding the degree of preference to be given to open standards, other than (impliedly) where there are two equally viable alternatives from which to choose. In fact, the Purpose clause of the Circular bluntly states that, "[t]hese policies do not create the bases for discrimination in agency procurement or regulatory activities among standards developed in the private sector, whether or not they are developed by voluntary consensus standards bodies."

The U.S. definition of an open standard came into being as a result of Congress's 1995 decision that government should get out of the business of developing, and requiring compliance with, 'government unique' standards. That directive was set forth in the Technology Transfer and Advancement Act,[19] which was subsequently augmented by Office of Management and Budget (OMB) Circular A-119.[20]

Circular A-119 uses the term 'voluntary consensus standards' instead of 'open standards,' and defines such standards, and the organizations that create them, as follows:

> a. For purposes of this policy, "voluntary consensus standards" are standards developed or adopted by voluntary consensus standards bodies, both domestic

[19] National Technology Transfer and Advancement Act of 1995, 15 U.S.C. § 3701 (1995), available at http://ftp.resource.org/gpo.gov/laws/104/publ113.104.txt.

[20] OMB Circular A-119 Revised, Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities (rev. Feb. 10, 1998), available at http://www.whitehouse.gov/omb/circulars_a119.

> and international. These standards include provisions requiring that owners of relevant intellectual property have agreed to make that intellectual property available on a non-discriminatory, royalty-free or reasonable royalty basis to all interested parties . . . .
>
> (1) "Voluntary consensus standards bodies" are domestic or international organizations which plan, develop, establish, or coordinate voluntary consensus standards using agreed-upon procedures . . . . A voluntary consensus standards body is defined by the following attributes:
>
> (i) Openness.
> (ii) Balance of interest.
> (iii) Due process.
> (vi) An appeals process.
> (v) Consensus, which is defined as general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments.

While the OMB definition of voluntary consensus standards borrows heavily from the traditional process and IPR focused rules of SDOs, the last attribute of the definition stands out due to its significantly greater level of detail. The particularity of this criterion, in contrast to those that precede it (each of which could have been expanded to a similar degree) apparently arose from a desire to mimic to the extent possible the protections inherent in the U.S. administrative law adoption process. This was felt to be necessary by those that drafted the definition due to the fact that Congress was, in effect, delegating a significant governmental function to the private sector.[21] This concern is understandable in the case of (for example) the development of health and safety standards, but is less evident in connection with the creation of the great majority of purely technical ICT standards.

While Circular A-119 gives Federal agencies substantial leeway regarding which private sector standards they may choose to utilize, it is (in my view) regrettable that such a granular approach was taken regarding the definition of voluntary consensus standards of all types As earlier noted, the marketplace has found that equally efficacious and less burdensome processes can be used to create robust, open, and widely adopted standards in the ICT sector.[22]

Comparison of Definitions: While the definitions reviewed above are somewhat different, it is possible to roughly juxtapose the terms of each example, with the exception of the WTO TBT Agreement, due to its focus on preventing the use of standards and conformity assessment to disadvantage non-domestic trade.

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[21] Personal communication with James H. Turner, Jr., former Chief Counsel of the U.S. House of Representatives Committee on Science and Technology, who was directly involved in the drafting of the Act.

[22] The Department of Commerce recently invited the submission of comments relating to the Circular which may lead to its amendment, or more likely the release of additional guidance to the Federal agencies in respect of its implementations. My written comments, also presented verbally at a government workshop, can be found at:
https://law.resource.org/pub/us/cfr/regulations.gov.docket.02/09000064810013ef.pdf.

	EIF 1.0 2004	EIF 2.0	U.K. Principles 2012	WTO TBT Annex 3 - 1995	OMB A-119 1998
Term	Open Standards	Open Standards	Open standards	Standards	Voluntary Consensus Standards
Applica-bility	Managers of eGovernment projects in Member State administrations and EU bodies	All those involved in defining, designing and implementing European public services	Central government departments, their agencies, non-departmental public bodies and any other bodies for which they are responsible	WTO/TBT Signatory nations	Agencies and agency employees who use standards and participate in voluntary con-sensus standards activities, do-mestic and international, except for active-ities carried out pursuant to treaties
Purpose	- Support EU strategy of providing user-centered eServices by facilitating the interoperability of services and systems between public adminis-trations, as well as between administrations and the public (citizens and enterprises), at a pan-European level - Supplement national inter-operability frameworks in areas that cannot be adequately addressed by a purely national approach - Help achieve interoperability within and across different policy areas	Promote and support the delivery of European public services by fostering cross-border and cross-sectoral interoperability	[Standards that] exhibit all of the following criteria are considered consistent with this policy: Col-laboration, Trans-parency, Due process, Fair access, Market support, IP Rights are available royalty free	In respect of standards, the standardizing body shall accord treatment to products origin-ating in the territory of any other Member of the WTO no less favourable than that accorded to like products of national origin and to like pro-ducts originating in any other country	Directs agencies to use voluntary consensus standards in lieu of government-unique standards except where inconsistent with law or otherwise impractical, but does not create the basis for discrimination in agency procure-ment or regula-tory activities among standards developed in the private sector, whether or not they are devel-oped by volun-tary consensus standards bodies
Origin	Adopted and will be maintained by a not-for-profit organisation	Not addressed	Specification or standardisation organisation, or a forum or consortium	To be created by organizations complying with the Code of Good Practice for the Preparation, Adoption and Application of Standards	Domestic and international voluntary concensus standards bodies that have listed attributes
Process and Trans-parency	Ongoing develop-ment occurs on the basis of an open decision-making proce-dure available to all interested parties (consen-	All stakeholders have the same possibility of contributing to the develop-ment of the specification and public review is	[SSO has a] feedback and ratification process to ensure quality; the standard is maintained through a colla-borative decision-	Before adopting a standard, the standardizing body shall allow a period of at least 60 days for the submission of comments on the	Required attributes: (i) Openness (ii) Balance of interest (iii) Due process (vi) Appeals process

	sus or majority decision etc.)	part of the decision-making process	making process that is consensus based and independent of any individual supplier; Involvement in the development and maintenance of the standard is accessible to all interested parties; Decision-making process is transparent and a publicly accessible review by subject matter experts is part of the process.	draft standard by interested parties within the territory of a Member of the WTO	(v) Consensus (details omitted)
Availability	Either freely or at a nominal charge. It must be permissible to all to copy, distribute and use it for no fee or at a nominal fee	Available for study by all	Published, thoroughly documented and publicly available at zero or low cost	To be promptly published and available to domestic and foreign interested parties on the same terms; drafts to be available internationally on request	Not addressed[23]
IPR Terms	Intellectual property - i.e. patents possibly present - of (parts of) the standard is made irrevocably available on a royalty free basis	Intellectual property rights related to the specification are licensed on FRAND terms or on a royalty-free basis	Rights essential to implementation of the standard, and for interfacing with other implementations which have adopted that same standard, are licensed on a royalty free basis	Not addressed	Owners of relevant intellectual property have agreed to make that intellectual property available on a non-discriminatory, royalty-free or reasonable royalty basis to all interested parties
Open Source Terms	There are no constraints on the re-use of the standard	[Licensing terms] allow implementation in both proprietary and open source software	Rights [are also] licensed on a basis that is compatible with both open source and proprietary licensed solutions; These rights should be irrevocable unless there is a breach of licence conditions	Not addressed	Not addressed
Other	Part of a detailed and comprehensive pan-European ICT framework	Part of a detailed and comprehensive pan-European framework	Provides for eventual conversion of all government systems to comply with open standards	International standards to be "used as a basis" for national and regional standards where they exist; duplication to be otherwise avoided; participation	Annual reports on compliance to be delivered to Congress via NIST

[23] Whether or not SSOs may charge for copies of standards referenced into law is currently a topic of vigorous discussion in the United States. While the discussion has been simmering for years, a recent act of Congress requires that as of January 1, 2012, pipeline standards referenced into law must be available for free, resulting in a showdown of sorts between the SSO community and government.

				in international standards creation expected; standards to be based on performance, where possible; more	

Conclusions: It is likely that governments and industry will continue to struggle with definitions of open standards. Indeed, in August of this year, several of the SSOs that have been most influential in the development of the standards enabling the Internet and the Web issued their own set of principles for standards development. A significant motivation for this initiative appears to be an effort to claim equal legitimacy with the Big Is in the run up to a meeting of the ITU-T this December, at which (it is rumored) the ITU-T intends to seek to wrest a degree of control over the Internet away from the SSOs that have helped to make it what it is today. While reminiscent of traditional tenets, the elements underlying the principles endorsed by the group of SSOs include some intriguing additions that are in some ways reflective of modern realities, and in others that are perhaps best interpreted as serving the purposes of the organizations involved in making the joint announcement.[24],[25]

In light of the situational differences between industry sectors and standards applications, and between the disparate goals of governments and treaty organizations, it would seem that there is some validity to the industry contention that the importance of some elements of open standards definitions (e.g., relating to intellectual property rights) should in some cases be evaluated on a situational basis. Most obviously, the relevance to the public of the technical parameters of an obscure widget in the electronic bowels of a server is far different from the public interest in an accessibility standard deployed at government Web sites.[26] Process controls that would be relevant to the adoption of the latter would impose needless burdens on the creation of the former, because the public would not avail itself of the opportunities to participate or comment in any event. On the other hand, the creation of such a widget remains of significant importance from the perspective of antitrust and trade laws.

At the end of the day, if governments wish to adopt minimum requirements (or, more realistically, preferences) – as they should, in the appropriate situation - what is needed is not a simplistic one size fits all solution, but a more nuanced approach that recognizes the following:

- A base level of important openness elements (e.g., participation, transparency, availability, consensus/majority, technology neutrality) that should be regarded as relevant to the processes and other attributes of all types of standards, taking competition and trade law concerns into account;

- Special requirements that map to the unique needs of discrete situations and/or policy goals, such as mandating elements appropriate to protect civil rights exercised electronically; and

[24] The principles can be found at: http://open-stand.org/principles/. For a detailed analysis, see, Leading Standards Organizations Assert Principles of a "New Global Standards Paradigm," Updegrove, Andrew, ConsortiumInfo.org Standards Blog (August 30, 2012), at: http://www.consortiuminfo.org/standardsblog/article.php?story=20120830102530600.

[25] While definitions are helpful, confirmation is another matter. I have proposed that the creation of a global entity capable of certifying compliance with open standards development processes would be useful. See, A Proposal for a New Type of Global Standards Certification, Standards Today (Vol. VI, No. 8), Oct. – Nov. 2007, available at: http://www.consortiuminfo.org/bulletins/oct07.php#feature.

[26] I have forcefully argued for the recognition of what I refer to as "Civil ICT Standards," and for the protections that should be afforded to their development and adoption. See, for example, http://www.consortiuminfo.org/bulletins/feb08.php#feature.

- In the case of standards to be implemented in software, the means to enable implementation in both open source code as well as in proprietary software.

If such a relative approach is followed in ICT, it should be possible to ensure that those openness attributes that are appropriate and important will be employed when they are necessary, and not where their imposition would only tax a process that provides value as much based on agility and speed as on technical merit.

In a fully realized open environment, multiple levels of openness, together with their process requirements, would be recognized, and appropriate bodies would exist to certify compliance with those requirements. As of this point in time, it seems unlikely that such an ordered universe of standards development will develop in the near term. But with time, perhaps a system will evolve that objectively judges the openness of all standards on a situationally informed basis, and without discriminating on the basis of arbitrary classifications of their organization of origin.

Response of Andrew Updegrove to Request for Comments

Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities Office of Management and Budget

April 30. 2012

Thank you for the opportunity to comment on the *Federal Register* notice submitted by the Office of Management and Budget (OMB) regarding whether and how to supplement OMB Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities" (Circular).

I am a partner in the Boston law firm of Gesmer Updegrove LLP. Over the last 24 years, I have represented more than 100 non-profit membership organizations that develop and/or promote standards. While some of these standard setting organizations (SSOs) have been accredited by the American National Standards Institute (ANSI), the great majority have been formed to attract participation by relevant stakeholders on a global basis. Most commonly, such organizations are referred to as 'consortia.'

Focus: The Role of Consortia

The primary focus of this response will be on consortia. My remarks will address the degree to which the standards output and supporting activities of these voluntary, consensus-based organizations has become essential to the existence and further advancement of information and communications technology (ICT) since the Circular was promulgated in 1998, and the ways in which guidance under the Circular should be updated in order to maximize the benefits anticipated by Congress when it enacted the Technology Transfer and Advancement Act of 1995 (NTTAA).

My central premise will be that it is essential that the vital role played by consortia in the ICT sector be recognized and that, to the extent that any additional guidance or supplemental advice is provided by OMB, that such guidance and advice should serve to encourage rather than hamper uptake of consortium-developed standards, and to require the participation by federal government personnel in consortium developmental and other activities to the same extent as in those of traditional SSOs.

Background

In almost all cases, the standards that consortia have been formed to develop, promote, and/or otherwise support serve the ICT industries. Over the last thirty years, nearly 1,000 of these organizations have been created, and together the tens of thousands of standards they have developed address the needs of virtually every niche of ICT. [1] Indeed, for most of that period the information technology industry has looked preferentially to consortia for new standards, utilizing either already existing consortia or

[1] What I believe to be the most complete list of ICT SSOs (both traditional and consortia) in existence may be found at a Web site I maintain, called ConsortiumInfo.org. That list can be found here: http://www.consortiuminfo.org/links/index.php#categories.

launching new ones to meet its needs. To a lesser, but still very significant extent, this has been true in the communications technology sector as well.

One reason that industry has looked so heavily to consortia, as compared to traditional standards organizations, is that new ones can be set up so easily and quickly (it is rare that a week goes by without at least one standards-focused consortium being announced, and often several are launched). While each new consortium is likely to be similar in many ways to those already in existence, its purpose will usually be unique, and its focus will typically be precisely defined. By forming a new organization rather than taking a new project to an existing SSO, the founders can deploy 100% of their resources towards rapidly achieving whatever standards-related goal they have joined forces to achieve.

In almost every case, the new organization will be charged not only with developing a new standard or suite of related standards as quickly as possible, but the founders will underwrite whatever additional activities are needed to achieve their goals. Those activities typically include many of the following activities: collaboration on joint marketing and education activities; sponsoring research; registering distinctive trademarks and launching certification testing programs; holding meetings and speaking at tradeshows and other venues; and coordinating with other consortia and traditional SSOs to increase synergies of results and lower the likelihood of needless duplication of efforts.

Once launched, the great majority of consortia follow one of a few tracks:

- Where they are very narrowly focused (i.e. on a single standard, or a few closely related standards), they will eventually go out of existence when the need for further extensions to their standard(s) has passed. At that time, the standards and other intellectual property of the consortium will usually be transitioned to another consortium or traditional SSO.

- Where they are more broadly focused (e.g., on an area of technology or type of product, service or application), they will continue to launch new working groups for as long as the need for activity in that area sustains.

- Where they become widely recognized for their value, they often become recognized as institutions to be sustained over the long term, taking their place among the globally recognized sources of excellence and leadership in standards development.

There are many examples of consortia that demonstrate each of these life cycles.

Consortia also vary widely in the rules relating to intellectual property rights (IPR) they adopt. In many areas (e.g., consumer electronics and telephony), the commitments that members are expected to make are similar to those required in traditional SSOs: i.e., each participant must agree that if a standard it helps develop will infringe a patent claim owned by it (a 'Necessary Claim'), it will either agree to license that claim on reasonable and non-discriminatory (RAND) terms to everyone that wishes to implement the standard, or it will disclose the Necessary Claim, and the portion of the standard that would need to be modified to avoid infringement.

But in other areas of endeavor (e.g., Internet and Web standards), consortia often adopt stricter rules, requiring those that participate in developing a standard to forego the right to charge a royalty or other compensation for the right to practice a Necessary Claim.

This ability to set the particular IPR rules that a group of founders believe to be best suited to achieving the goal at hand provides another reason for forming new consortia, since it avoids the need to agree to the type of 'lowest common denominator' IPR Policy that an

organization with scores of active working groups might otherwise find it necessary to maintain.

Consortia differ in other important respects, including rights of participation. The great majority of consortia exhibit levels of 'openness' that are equal to, and which sometimes exceed, those of traditional SSOs. A small percentage, however, operate in a more restricted fashion. These organizations (often referred to as 'Special Interest Groups,' or SIGS) are particularly common in technical areas characterized by 'patent thickets,' and offer a way for those companies with the heaviest concentrations of technology in the subject area to negotiate what amounts to a mutual cross license arrangement that allows third party implementations without the need to negotiate licenses with multiple patent owners.

Some of these very narrowly focused collaborations operate on a 'by invitation only' basis, although those participants that own patents underlying the resulting standard still commit to license their Necessary Claims on RAND terms to anyone desiring to implement the resulting standard.

These and other differences among consortia illustrate the benefits of this extremely flexible and organic approach to standards development. In large part, it is this ability to tailor structure, process, IPR policies and work plans that helps explain why this approach to standards development has proven to be so popular in the extremely competitive, fast moving, and patent-thick arena of ICT.

National Interest

Ensuring that the federal agencies give equal priority to both utilizing and helping develop consortium-developed standards is essential for a number of reasons central to the national interest.

First and foremost, ICT standards 'want' to be global standards. Not only is the benefit of universally implemented standards demonstrable given the portability of electronic devices and the global sharing of data and services, but the Agreement on Technical Barriers to Trade[2] to which members of the World Trade Organization are signatory prohibits those nations from unjustifiably mandating compliance with local standards in preference to equivalent global standards in order to set up barriers to free trade. Where a common standard is used everywhere, trade can follow as well.

This default to global standards means that the federal agencies will have little real option but to specify implementation of a given consortium standard in procurement once the global marketplace has decided to implement it. To do otherwise would raise costs of procurement, deprive the federal purchaser of the benefits of the ongoing innovation in the marketplace that develops around a global standard, and, in many cases, make it difficult and burdensome to communicate and interact with the world beyond the agency's own network. This would be a particularly inappropriate situation where interaction with the American public is involved.

There is an important, indirect reason for the federal agencies and regulators to support consortium standards as well. The formation of standards consortia has been almost exclusively led by U.S. multinational corporations. While most consortia actively recruit foreign as well as domestic corporations and other types of stakeholders (e.g., U.S. and foreign universities, non-profits and national, state and local governmental bodies,

[2] Also sometimes referred to as the Uruguay Round Agreement, available at: http://www.wto.org/english/docs_e/legal_e/17-tbt_e.htm.

depending on the technical focus and business goals of the consortium), only a small number of consortia have been formed by foreign interests.

Because standards are so effective at enabling new technologies, products and services, being able to set a standards agenda can provide great advantages to those vendors that define the scope of a new SSO and then direct its strategy. This is because those vendors then enjoy a 'first mover' advantage in the marketplace, and also because the standards that they choose to create will typically build upon technology they have already developed (and frequently patented).

Similarly, matters of great national policy importance are heavily dependent on consortium-developed standards for achievement. To give but a few examples, the SmartGrid, electronic health records, cybersecurity, first responder capabilities, privacy, open government, and cloud computing all rely extensively on consortium developed standards, often to a greater extent than those produced by traditional SSOs.

Definition of 'Voluntary Consensus Standards Bodies'

As noted above, consortia differ widely in the composition of their membership, the rules they adopt (procedural, with respect to IPR, and otherwise), and the degree of respect that their output earns in the marketplace. Over the years, 'best practices' for consortia formation, governance and technical process have continued to evolve, reflecting market needs and perceptions, including with respect to values such as transparency, accessibility to relevant stakeholders, due process and consensus.

In order to be successful, a consortium must be able to attract sufficient participation by relevant stakeholders to create valuable standards, and sufficient uptake of its standards by non-members as well as members. These results are unlikely to be achieved unless the consortium has met market expectations of fairness, openness, accessibility, and transparency.

However, the Circular includes a specific set of criteria for defining what are referred to as "voluntary consensus standards bodies," some of which are general, while others are quite specific. The attributes defining such an SSO are stated to be as follows:

> (i) Openness.
>
> (ii) Balance of interest.
>
> (iii) Due process.
>
> (iv) An Appeals Process.
>
> (v) Consensus, which is defined as general agreement, but not necessarily unanimity and includes a process for attempting to resolve objections by interested parties, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments.

While this definition sets out a very suitable set of attributes for creating standards worthy of agency consideration, it does not describe the only appropriate regime under which standards can be developed that are responsive to the needs, and which fairly reflect the input, of interested stakeholders. Attributes (iv) and (v), for example, are both specific as

well as absent in a wide variety of very well respected consortia that have pursued different rules and processes in pursuit of similar goals.[3]

Because the Circular defines 'voluntary, consensus standards' as standards "developed or adopted by voluntary consensus standards bodies," other sections of the Circular are restrictively impacted as well.

Does this matter? It is true that the introduction to the Circular states that:

> [t]hese policies do not create the bases for discrimination in agency procurement or regulatory activities among standards developed in the private sector, whether or not they are developed by voluntary consensus standards bodies.[4]

On the other hand, Circular Item 7 states that:

> [a]gencies must consult with voluntary consensus standards bodies, both domestic and international, and must participate with such bodies in the development of voluntary consensus standards when consultation and participation is in the public interest and is compatible with their missions, authorities, priorities, and budget resources.

Similarly, Item 9.a. only requires reporting with respect to voluntary, consensus body standards. In these cases (at least), the Circular does discriminate between those SSOs that meet the somewhat arbitrary and restrictive Circular definition of a voluntary, consensus standards body and those that do not.

Unfortunately, it is difficult to tell whether these are the only cases where such discrimination is intended. For example, there are numerous examples of statements mandating use of voluntary consensus standards, without mentioning that consortium standards represent equally acceptable alternatives.[5] Does this mean that in any given instance non-voluntary, consensus body standards were consciously excluded from the statement, or simply that a 'shorthand' reference was used? And how is the reader supposed to be able to tell what the intention is in a given case, given that it is clear (from other statements, e.g., in Items 9.1 and 6.g) that in some cases only the narrow definition is intended?

Not surprisingly, this writer is aware of situations in which private sector representatives favoring a standard developed by a traditional SSO have misrepresented to Federal

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[3] For example, in many consortia the Board of Directors or a lower level committee will review whether a given working group process has worked appropriately from a due process point of view before recommending a draft standard for adoption, and take appropriate action if this is found not to be the case. But would this practice satisfy the definition as an "appeals process?" Similarly, while traditional SSOs require "no" votes to include reasons for a negative vote, with each such reason then being addressed, in writing, and reported back to the committee, most ICT consortia view these extra steps as being more burdensome than beneficial, and in any event unacceptably time consuming. Instead, opinions are expressed – often vigorously – in advance, after which an up or down vote is taken. The result is no less democratic, and helps serve the goal of rapid deployment of standards in a fast-moving, competitive environment.

[4] Circular, Item 1. Certain other references are consistent. For example, Item 6.g. repeats the same dictum, and acknowledges that other standards can be referenced in regulations and used in procurement, although these actions need not be reported.

[5] See, for example, Items 6 ("All federal agencies must use voluntary consensus standards in lieu of government-unique standards . . .") and 6.1.: ("Your agency must use voluntary consensus standards. . . ").

personnel that, in fact, only standards developed by such an organization should be used in procurement, rather than a rival standard developed by a consortium.

The inclusion of this very specific, somewhat arbitrary definition of a voluntary, consensus body standard has had unfortunate effects outside the Act and the Circular as well. For example, when the National Cooperative Research and Production Act was amended in 2004[6] to provide specific protection for SSOs, Congress opted to restrict this extended protection to SSOs that meet the Circular's definition of a voluntary, consensus standards body.

In doing so, Congress likely excluded the vast majority of the consortia that have created untold thousands of the standards upon which our modern, ITC-based economy is based, and which have proven to be a boon to the competitiveness of U.S. industry, simply because their own internal rules did not conform to the specific requirements relating to appeals and consensus that the Circular chose to approve.

It is strongly to be recommended that if the Circular is amended, that the language quoted above should be modified to indicate that attributes such as those enumerated are typical of, but do not exclusively define, a 'voluntary, consensus standards body.' Similarly, it should be made clear that participation by government representatives, and reporting under the Act, should extend to consortia and consortium-developed standards as well.

Otherwise, the Circular will serve to discourage and penalize SSOs from adopting those rule sets that are most appropriate to modern realities, will undercut Congress's purpose in adopting the NTTAA, and will deprive Congress of important information regarding Agency involvement in national and international standards development activities and uptake of non-government unique standards.

Criteria for Referencing

As noted earlier, some consortia are more open than others. In its current form, the Circular notes criteria that some of these consortia (e.g., those that have adopted 'by invitation only' rules of participation) would not meet. As currently written, the Circular rightly permits standards developed by such organizations to be utilized by the federal agencies where appropriate. It is important that this flexibility be maintained in the area of ICT standards for the reasons given above – there may simply be no practical alternative where the marketplace has already chosen to uniformly implement a standard developed by such an organization.

However, there are other areas in which giving preference to standards developed by SSOs (consortia or traditional standards organizations) that meet certain minimum process and other standards may be appropriate, in order to achieve policy goals as compared to simply serving the technology-neutral demands of government procurement. In Item 6.f., the Circular specifically acknowledges that Federal agencies not only may, but should, take into account additional criteria in making standards-related decisions, stating in part:

> When considering using a standard, your agency should take full account of the effect of using the standard on the economy, and of applicable federal laws and policies, including laws and regulations relating to

[6] The National Cooperative Production Amendments of 1993, Pub. L. No. 103-42, amended the National Cooperative Research Act of 1984, Pub L. No. 98-462, renamed it the National Cooperative Research and Production Act of 1993, and extended its provisions to joint ventures for production. The Standards Development Organization Advancement Act of 2004, Pub. L. No. 108-237, extended the provisions of the NCRPA to standards development organizations.

> antitrust, national security, small business, product safety, environment, metrication, technology development, and conflicts of interest. Your agency should also recognize that use of standards, if improperly conducted, can suppress free and fair competition; impede innovation and technical progress; exclude safer or less expensive products; or otherwise adversely affect trade, commerce, health, or safety . . . .

An important and timely example of an area in which such additional criteria should be taken into account involves the use of standards essential to the interaction between governments and citizens, and to the exercise by citizens of their constitutional rights.

The American experience of the last two centuries has demonstrated the need for constant vigilance in order to ensure that the unfettered exercise of constitutional rights remains available to all citizens. These rights include those of assembly, freedom of speech, voting, access to public representatives, and more. But today, each of these rights is increasingly exercised on the Internet rather than in person. Indeed, for budgetary and other reasons, national, state and local government bodies are pushing more and more of their interactions out of courthouses and onto the Web.

Unless all citizens have the same access to government-provided services, venues of expression, and information, they will be just as effectively disenfranchised as if they were barred from entering a courthouse. But unless governmental decision makers ensure that these services are accessible by all, regardless of their disabilities and the technology they can afford, citizens, and particularly those who are poor or disabled, will be so disenfranchised.

For this reason, I have previously proposed the recognition of what I call 'Civil ICT Rights.'[7] I introduced the role that standards play in guaranteeing Civil ICT Rights as follows:

> Much as a constitution or bill of rights establishes and balances the basic rights of an individual in civil society, standards codify the points where proprietary technologies touch each other, and where the passage of information is negotiated.
>
> In this way, standards can protect — or not — the rights of the individual to fully participate in the highly technical environment into which the world is now evolving. Among other rights, standards can guarantee:

1. That any citizen can use any product or service, proprietary or open, that she desires when interacting with her government.

2. That any citizen can use any product or service when interacting with any other citizen, and to exercise every civil right.

3. That any entrepreneur can have equal access to marketplace opportunities at the technical, standards-mediated level, independent of the market power of existing incumbents.

4. That any person, advantaged or disadvantaged, and anywhere in the world, can have equal access to the Internet and the Web in the most available and inexpensive method possible.

[7] Updegrove, Andrew, "A Proposal to Recognize "Civil ICT Rights," Consortium Standards Bulletin, Vol VII, No. 2, February – March 2008, at: http://www.consortiuminfo.org/bulletins/feb08.php#feature

5. That any owner of data can have the freedom to create, store, and move that data anywhere, any time, throughout her lifetime, without risk of capture, abandonment or loss due to dependence upon a single vendor.

Since I wrote that article, the number of public-facing government initiatives launched on-line has dramatically increased. But while much progress has been made at the federal level to ensure that on-line services will be both secure as well as user-friendly, only limited attention has been paid to whether every citizen can access those services, regardless of what technology they can afford, what technology they are capable of using, and whether or not government technology decisions arbitrarily limit the choices that every citizen, regardless of income or ability, can make when selecting ICT goods and services.

For these reasons, I would suggest that decisions relating to standards that are integral to government-citizen interaction – what one might reasonably refer to as 'Civil ICT Standards' - be made in a different manner. I identified those standards as follows:

> Standards in this class today comprise only a small, but vitally significant percentage of all standards. But they demand special attention in their selection and protection in their use, because their impact is both fundamental and far reaching. And, since some standards (like document formats) are intended for very long-term use, it is more than usually important to select them carefully.
>
> A number of existing Civil ICT Standards can already be readily identified. By way of example, they include those that enable universal global access in native character sets (the Unicode) and the basic standards upon which the Internet and the Web are based. In the future, Civil ICT Standards will include those that relate to health records, privacy, security, electronic voting, federated identity, and much more. Over time, they will become both more numerous as well as more important.

In the case of standards such as these, setting a higher bar in terms of process (e.g., guaranteeing broad stakeholder access, ensuring transparency to non-participants, preventing lock-in to a single technology platform, and avoiding unnecessarily high costs of acquisition) would be important. Moreover, in a limited number of cases, employing the 'soft' power of public procurement could also provide opportunities and incentives to bring new competition into areas of the marketplace that have become dominated by a single vendor or service provider, providing lower costs, more competition, and richer consumer choices.

Summary

It is welcome and appropriate that comments have been solicited relating to whether and how any new guidance should be given under the Circular should refer to consortia. Since the date of the Circular's promulgation, the role of consortia, and the standards they develop, has continued to expand rapidly in the area of ICT (indeed, they are beginning to be found in other areas, such as pharmaceuticals, as well). In particular, the importance of ICT, and in particular the Internet and the Web, to both the public and private sectors has increased by orders of magnitude.

At the same time, the importance of U.S. ICT producers and service providers to the economy and to the nation's competitiveness in international trade continues to grow apace. The predominant role played by U.S. companies in forming consortia has played no small role in ensuring the continuation of this trend.

For these reasons, it is essential that Federal purchasers and regulators remain agnostic as to the source of ICT standards in the great majority of cases, and that federal agency personnel give equal priority to participating in and supporting consortia. Congress should also receive timely information with respect to federal involvement in the development and implementation of consortium standards.

At the same time, a distinction should be drawn between those standards whose origins have no relevancy to the exercise of Civil ICT Rights and those that do. In the latter case, I would suggest that any additional guidance should at minimum recognize the appropriateness of considering whether the selection of a given Civil ICT Standards would serve, neglect, or even prejudice, the exercise of an important Constitutional right.

I thank you for the opportunity to provide these comments, and look forward to the further dialogue that will be hosted on these important issues.

Leading Standards Organizations Assert Principles of a 'New Global Standards Paradigm'

Andrew Updegrove

The big news in the standards arena yesterday was a joint announcement by five of the standards setting organizations (SSOs) that have been most essential to the creation of the Internet and the Web: IEEE, World Wide Wide Web Consortium (W3C), Internet Architecture Board (IAB), Internet Engineering Task Force (IETF), and Internet Society (the last three being closely affiliated entities).

Joint announcements by SSOs are rare, and the subject matter of this announcement was more so: each organization was joining in the endorsement of a set of five principles that they assert support a "new paradigm for standards" development.

Most of the principles will likely strike those not familiar with standards development as being rather self-evident (one commentator from the utility industry who spoke with officers of the SSOs wrote, "frankly, I found their logic unassailable"). But to those who have engaged in debates for many years over what should qualify as an 'open standard,' the announcement, and the further information to be found at the Web site established to support the initiative, the message was a bit cryptic.

My own first reaction was to wonder what had inspired the announcement, and what the five SSOs hoped to specifically achieve? I was able to connect with some of the people who were instrumental in constructing the initiative to learn the answers to those questions, and some of the back story leading to the launch.

Before I go there, however, let me provide an overview of the information made available by the five organizations.

First, there is a brief joint statement of purpose, reproduced in full at the end of this blog entry. It begins by pointing, quite justifiably, to the creation of the Internet and the Web as hugely beneficial and successful products of standards development. It then asserts that this result could only have been achieved as a result of "key characteristics of a modern global standards paradigm." It goes on to read as follows:

> We embrace a modern paradigm for standards where the economics of global markets, fueled by technological advancements, drive global deployment of standards regardless of their formal status.
>
> In this paradigm standards support interoperability, foster global competition, are developed through an open participatory process, and are voluntarily adopted globally. These voluntary standards serve as building blocks for products and services targeted at meeting the needs of the market and consumer, thereby driving innovation. Innovation in turn

> contributes to the creation of new markets and the growth and expansion of existing markets.

'Paradigm,' of course, is an oft-used (and almost as often, misused) term. Properly employed, it should mean that a new construct, methodology or business model incorporates real differences from its predecessors, that these differences have meaningful effects, and that these effects are important. The first question to be answered then becomes how successfully have the five SSOs been able to substantiate their claim?

Let's start with the principles themselves, which are phrased in the press release as follows:

- cooperation among standards organizations;
- adherence to due process, broad consensus, transparency, balance and openness in standards development;
- commitment to technical merit, interoperability, competition, innovation and benefit to humanity;
- availability of standards to all; and
- voluntary adoption.

At first I was puzzled by this list, because in most respects it incorporates the same principles that virtually every definition of best practices in standards development would include. More to the point, these principles are very similar to those that the traditional standards development infrastructure, comprising national and global SSOs, already endorses. The only exception is the mention of benefiting humanity in the third bullet, which is wholly novel.

However, if one goes to the OpenStand Web site (strangely, the press release does not include a link to that site, nor to the sites of two of the parties to the announcement), there is a Principles page that provides additional text, and at this level of detail the concepts being endorsed start to become more interesting, and the differences between traditional definitions of open standards and OpenStand's definition become more clear.

The elaboration of the first principle is very brief. 'Cooperation' is summarized as follows:

> Respectful cooperation between standards organizations, whereby each respects the autonomy, integrity, processes, and intellectual property rules of the others.

The decision to include, and begin, with this principle is rather interesting because SSOs, like most other entities, can be territorial. At the same time, as I've written many times before, the greatest standards challenges today require an integrated effort across many technology sectors. Since most SSOs (and particularly those formed in the United States) have historically focused on the standards requirements of a single industry, or relating to a single (sometimes very narrow) technical area - or even on a single product feature - effective collaboration is essential if cross-sectoral standards challenges are to be successfully met.

Examples of such ambitious and essential efforts include designing a workable SmartGrid, achieving and maintaining network security, enabling national systems of electronic health records, and much more. The SSOs behind the OpenStand principles are therefore very right to emphasize that a new commitment to collaboration is essential if the standards-related demands of today are to be successfully addressed. They are also correct in holding the Internet and the Web up as examples of the great benefits that can be achieved from such collaboration.

In most respects, the criteria listed under the second Principle (Adherence to Principles) are traditional rather than novel. For the most part, they recapitulate the process values and steps of SSOs that are part of the historical standards development infrastructure, such as requirements for due process, broad consensus, and transparency. Unfortunately, the criteria become more granular, to the point where they would exclude consortia that may take a less regimented, streamlined approach but still quite successfully achieve overall goals of transparency, due process, and so on.

For example, the due process bullet includes as an element, "opportunities exist to appeal decisions." By their nature, appeals of decisions can result in delay, and may also give openings to game playing. But it is also possible to achieve the same result through (for example) working conscientiously towards consensus in real time and including a process review at completion. Similarly, consortia are usually based on 'pay to play' business models, and do not always offer all of the opportunities for public comment that traditional SSOs do. At the same time, not all traditional SSOs would meet all of the criteria listed, and some consortia are in fact much more transparent than traditional SSOs (the IETF and OASIS, for example).

The third Principle (Collective Empowerment) includes perhaps the most interesting criteria, not because they are new, but because they are being emphasized over other criteria that could have been mentioned (the last being the notable exception). Collective Empowerment is described as follows:

> Commitment by affirming standards organizations and their participants to collective empowerment by striving for standards that:
>
> - are chosen and defined based on technical merit, as judged by the contributed expertise of each participant;
> - provide global interoperability, scalability, stability, and resiliency;
> - enable global competition;
> - serve as building blocks for further innovation; and
> - contribute to the creation of global communities, benefiting humanity.

The last bullet aside, one would assume that each of the other criteria would be assumed in the development of standards (what SSO would want to admit that decisions were not made based on 'technical merit?') That said, some of these attributes can often be neglected (e.g., a commitment to "scalability, stability, and resiliency"). It is also worth noting that while some of these criteria are indeed essential to developing standards for networked systems, they would not be as important outside of information and communications technology (ICT)**.**

The last bullet, of course, is the stand-out attribute of the entire set of principles. And while the ability to benefit humanity is not unique to ICT, the ability to create global communities largely is. The inclusion of this criterion is particularly relevant when it is remembered that most standards development is driven by industry, and that industry tends to be values-neutral at best (some would substitute 'amoral' for values-neutral, and others might use a less tactful term). The five SSOs behind the announcement represent some of the very few SSOs, both traditional as well as consortia, that have incorporated such a concern into their missions, and to a varying degree, each has acted on that conviction.

In what will prove in some quarters to be the most controversial Principle and in others the least, 'Availability' reads in its entirety as follows:

> Standards specifications are made accessible to all for implementation and deployment. Affirming standards organizations have defined procedures to

> develop specifications that can be implemented under fair terms. Given market diversity, fair terms may vary from royalty-free to fair, reasonable, and non-discriminatory terms (FRAND).

The last sentence will please all traditionalists, in that it restates the view expressed most frequently by commercial interests. At the same time, it will disappoint open source advocates, as well as supporters of openness of all types in Europe and elsewhere. These advocates believe that at least some essential standards (e.g., those used in government procurement and in citizen-facing government portals) should be available without payment. European debates on this topic have raged since at least 2004 in connection with evolving government policies, and those debates continue today.

Free standards advocates are likely to be particularly disappointed that a group of SSOs that use the Internet and the Web as examples of a new global standards paradigm in action would not come out in favor of free standards, since much of the success of these same networks has so often been attributed to the fact that key participants decided not to charge for the infringement of their patents by those implementing key standards. In light of W3C's insistence on discouraging economic encumbrances on its standards to the greatest extent possible, and the marathon effort it took to craft and adopt a Patent Policy true to that goal, it is likely that this OpenStand founder will receive the greatest criticism for agreeing to endorse Principle number 4.

The background for this position is not difficult to guess: the IEEE has over 500 active working groups, most of which are in technical and industrial areas that are accepting of standards that require payment of license fees. It would not have been likely that IEEE (or, for that matter, the other SSOs) would have agreed to a statement limited to royalty-free standards, and I have been able to confirm that this was, in fact, the case.

Some will say that given such a split, it would have been better to say nothing at all than to include the statement made with respect to IPR. Others will say that this is a battle to be fought elsewhere, and that the W3C can be excused for not being intransigent on this point.

The last Principle, 'Voluntary Adoption,' is deceptively brief, reading in full as follows:

> Standards are voluntarily adopted and success is determined by the market.

This last Principle, I subsequently learned, starts to hint at one of the main reasons for issuing the Principles. Many governments have traditionally shown a preference for, or indeed restricted themselves entirely, to including standards in procurement decisions that were created through the traditional, global standards infrastructure. For example, until recently European governments have engaged in a sort of Neverland exercise of refusing to alter their procurement rules even as they make wholesale use (like everyone else) of technology that is rife with standards developed by consortia. Indeed, most of the Internet and Web is enabled by standards developed through these organizations.

Europe is currently reevaluating this position, and in the United States, the government is also deciding whether to amend, or reinterpret, Office of Management and Budget Circular A-119, which includes criteria for the utilization of private sector standards. Moreover, the International Telecommunication Union (ITU) has for many years tried to insert itself into control of standards enabling the Internet, and those efforts are continuing. Finally, increased attention is being paid to the open standards criteria laid out under the World Trade Organization's Agreement on Technical Barriers to Trade. Under that Act, signatory countries are barred from using 'home grown' standards to bar, or impede, entry of products conforming to globally adopted standards. Proponents of standards developed by traditional standards organizations frequently assert that consortium-developed standards should not be regarded as meeting this threshold.

I've confirmed that one motivation behind the release of the Principles at this time is to publicize the view that 'non-traditional' SSOs, such as the founders, are not only capable of creating world-class standards that can result in vast benefits to humanity, but that the processes that they employ are the equal of, and perhaps superior to, those of their more traditional peer organizations. I've also confirmed that it's no coincidence that the Principles map to (and in some respects go beyond) those that the traditional standards organizations espouse, and which the Agreement on Technical Barriers to Trade require.

In this light, the inclusion of IEEE in the mix might seem incongruous, since it is an ANSI-accredited standards developer. But such a categorization would sell IEEE short, as it has a global membership with hundreds of thousands of individual members, hundreds of corporate, academic and government members, and a library of authored standards larger and more influential than those of all but a surprisingly small number of nations. Moreover, adoption of its standards, like those of consortia, is immediate, occurring before those standards are adopted as American National Standards, or by ISO/IEC JTC 1. Indeed, in the case of IEEE's wildly successful wireless standards, many companies jump the gun and begin releasing products built to a new version of a standard before that version has even been adopted within IEEE.

With this background in mind, a statement from the very short, three paragraph Joint Statement already quoted above takes on a clearer meaning (emphasis added):

> We embrace a modern paradigm for standards where the economics of global markets, fueled by technological advancements, drive global deployment of standards ***regardless*** *of their formal status*.

My understanding is that other motivations for the initiative included an effort to set the five organizations apart from more proprietary consortia, and to set the bar by which other organizations are to be measured. My own proposal to a similar purpose can be found in an article I wrote in the fall 2007, which you can find here (my related editorial is here).

A review of the OpenStand site provides other details of note, such as a call for organizations to endorse the Principles, a list of a few organizations that have already done so (as of yesterday, they were mostly affiliated to some extent with one or more of the five SSOs), a request for individuals to join in expressing support (and another list), and 'site badges' that can be downloaded to indicate support, one of which you can see above.

My final impression, after a detailed review, can be summarized as follows:

- The Principles. I think that in the main they are laudable and sound. A few are too granular, requiring specific mechanisms that I think can be replaced with others while achieving similar goals in a more streamlined fashion. This level of specificity will make it unnecessarily and needlessly hard for some consortia to endorse the Principles. And it is unfortunate that a more appropriate statement on IPR was not agreed upon which recognized not only that different sectors find different IPR rules appropriate, but also that in some areas – and particularly where 'humanity' has a stake – only royalty-free standards might be appropriate.

- The messaging could have been better. It's easier to understand what something is if it states what it isn't. In this case, it's necessary to take a deep dive and know some of the back story to understand how what is being proposed is really all that different from what are already commonly thought of as best practices. While I eventually 'got it,' it would have been beneficial to the initiative if some of the messaging had been more straightforward.

- The execution could have been better. The timing for the announcement was surprisingly bad (two days before the Labor Day weekend in the U.S., and in the summer doldrums in Europe). Apparently, an early August launch was originally intended, and the date continued to slip. Other slips include a very short white paper featured at the Web site that has obvious errors in it, the absence of a link in the press release to the OpenStand Web site, and the fact that few endorsers were recruited before launch. I was able to find only a single article online that indicated any journalists had been pre-briefed on the launch so that they could insightfully cover it (I did find about a dozen that were based on the press release), but I have since learned that press briefings did in fact occur. Presumably some of these journalists may be delaying their coverage until after the holiday weekend.

It will be interesting to see how the initiative fares in the weeks ahead. Hopefully this will be the beginning of a dialogue involving a wider audience, and perhaps as a result of that dialogue the Principles will continue to improve and evolve.

Let's hope that that's the case, because the definition of 'open standards' is indeed important. And the continuing rapid development of world class, universally available standards becomes more essential to almost every aspect of society by the day.

[I wrote again about OpenStand on October 15, 2012, in an entry you can read here: http://www.consortiuminfo.org/standardsblog/article.php?story=20121015082119976]

Bookmark the Standards Blog at http://www.consortiuminfo.org/standardsblog/or set up an RSS feed at: http://www.consortiuminfo.org/rss/

MONDAY MORNING WITNESS:

The High Price of 'Free'

Andrew Updegrove

The Web today offers an almost limitless amount of content. Indeed, every single day sees the addition of what, by any historical measure, seems to be an almost limitless amount of new content. And virtually all of it is free.

Where that content has been provided by commercial interests, one can assume that some sort of commercial reward is expected to follow (whether that reward is adequate to sustain traditional media houses is another matter). But what of the individual author?

To the good, any would-be creative type can now sign up for a free Web site and offer up her art to the entire world, nominally solving the age-old problem of distribution. That's a good deal for an Indie band, which can use its Web site to promote its band and connect to a fan base, publicize performance dates, and even sell music, but that doesn't work for an author. Even if she is able to attract readers, she will run up against the cold, hard reality of digital distribution: if it's text and it's on line, it had better be free. And no matter if the author has gone to the additional effort of formatting it as an eBook (more on this below).

The fundamental question comes down to this: will writers be able to make a living from their work, and if not, what will the quality and variety of writing be like?

That's all well and good, perhaps, for someone that's writing purely for their own amusement. But what of the author that takes her craft seriously, or even wants to make a career out of writing?

The fundamental question comes down to this: as physical books die out, will writers be able to make a living from their work, and if not, what will the quality and variety of writing be like?

To date, most of the anguish that has been aired relating to content and the Web has focused on piracy. But piracy is only an issue for publishers and for writers and other artists who are already successful. Somebody has to know about a writer's work before they want to copy it. Most writers can only dream about becoming successful enough to worry about piracy.

The real issues for would-be writers today are two-fold: now that the middlemen that used to discover, package, promote and distribute the written word are being consigned to the ash heap of history, how will new authors become known to readers? And if readers become accustomed to free and $.99 downloads, how will writers survive?

At this point, you may be asking yourself whether these problems are real. And in truth, there are more ways for writers to be read today than ever before, as witnessed by the explosion of blogs and the proliferation of self-publishing and print on demand publishers. But if you look at how many writers are making a living from their work, what you'll discover is that in most areas their numbers are dwindling dramatically rather than expanding. Newspapers and magazines have already been decimated, and their writing

staffs along with them. It seems inevitable that authors of books will suffer the same fate as eReaders take over a larger and larger percentage of the market.

If you think that statement is alarmist, I invite you to click on these two links. The first is the top 100 hard copy best seller list at Amazon, and the second is the equivalent list for the Kindle. As of this writing, two things leap out from the first list: 9 out of 20 of the hardcover books are children's books – either picture books, or books that parents would read to children, which are presumably less likely to be cannibalized by sales of eBook versions of the same titles. And of those that remain, the prices are far lower than they would have been only a few years ago. Now look at the second list: for reasons that make sense for no one other than Jeff Bezos, the list of *free* eBooks is posted right along side the list of *paid* books. Small wonder that seven out of the top twenty paid eBooks are priced from $.99 to $3.99. Make that eight for the next twenty.

In whose universe does that sort of juxtaposition make sense, except for Amazon's, in its quest to lock everyone that reads into its proprietary eBook format, no matter how large the losses it may rack up along the way? Unfortunately, Amazon has left its competitors with no choice but to compete on price, leading to a price war between Sony and Amazon in the U.K. this summer where each discounted the eBook versions of many best-selling titles by an incredible 97%.

So what else is behind this race to the bottom? One problem is that there's simply too much content out there that's available for free. Another is that the Internet is a million miles wide, and for the most part, only an inch deep. It's easy to see the impact of this reality when you look at advertising. Before the Internet, there were only so many billboards, TV and radio programs, and magazine and newspaper pages to advertise on. Today, the number of places to post an ad on the Web is almost infinitely large, and those placements can be targeted with laser-like precision to the most likely purchasers. As a result, the price of an ad has plummeted by orders of magnitude.

The same thing has happened in photography. Today, even a smartphone - let alone a point and shoot camera - can produce a salable picture. Not surprisingly, an increasing number of sites will sell a newspaper, magazine, PR firm or anyone else unlimited usage of an image for $3 to $8. Do you want a picture of an elephant? Well, there are over a million images for sale within that price range (no, I'm not making that number up). How does a professional photographer stand out, let alone sell enough work to make a living, when so many amateurs can upload a passable photo and a key word search brings up thousands of images?

So much for the thousands of freelance photographers that used to sell their work, or for most of the staff photographers that were sent on location by newspapers, magazines and ad agencies. And so much, too, for photographs that tie into stories, rather than simply align topically at a high level.

It's the same deal for writers (and especially fiction authors), except that they now have the worst of both worlds. Authors that used to be able to find agents and publishers are finding it nearly impossible to do so. When they are successful, the publisher now wants them to do much of the work the publisher used to do – including editing their own work and promoting it, too.

Meanwhile, authors that self-publish have to bear the entire burden on their own, and only a tiny fraction will be able to rise above the constantly increasing flood of writers that are taking this approach. As with the freelance photographer, the chance of a potential customer discovering any particular author's 'elephant' is almost zero.

At this point, you may be inclined to ask, "OK, that sounds rough for writers, but all kinds of people are having a tough time today. So why should I care?"

The answer to that question was most succinctly suggested by a successful new author I read about in an article focusing on self-publishing. His formula for success goes something like this: every three or four months he churns out a new mystery novel with a similar title, which he sells in eBook form (only) for just $.99. At that price, he only makes about $.30 a book, but because he has attracted quite a following at that price, he is making a decent living. He spends roughly half his time writing the same type of formula book over and over again, and half his time promoting his increasing body of work.

What struck me most about the article was the author's response when asked if a self-published mystery author had to be as good as Stephen King to be successful. His answer went something like this:

> *I don't have to, because my books cost only $.99. It's Stephen King that has the problem, because if he wants to charge $9.99 for his books, he has to write ten times better than I do.*

If this guy has a point, then I would suggest that we all have a problem, or at least do those of us that value good writing. The fact is that writing a really good book in any genre requires an enormous amount of talent and work. Back when publishers provided the full package to those that they agreed to work with, books represented not only the earnest efforts of writers and the promotional efforts of the publishers, but also the impact of skilled editors that helped authors turn their raw manuscript into the best piece of finished work they were capable of producing.

For hundreds of years now, authors have been able to nurture and perfect their craft throughout a lifetime of sweat and effort. Until recently, there were scores of high-quality publishers instead of six dominant houses. Many of these publishers would stand behind their authors, supporting them even when they wished to tackle a subject that looked iffy from a commercial perspective, but which seemed important or might push the artistic envelope. Publishers like these provided the kind of financial, editorial and commercial support - often through relationships that spanned many decades - that brought some of the world's greatest literature into full flower. Those publishers didn't make money on every book, but over time, they did just fine.

Nor was skilled editing all that publishing used to be all about. A few years back I had a meeting in the executive offices of one of the best known, old line American publishers. As I walked along the halls I passed dozens of original paintings, pen and ink works and water colors by artists such as Winslow Homer, N.C. Wyeth and Frederick Remington. Each had been commissioned to grace the cover or interior of a book the house had published. Those days are now decades in the past, but even today few publishers would put their name on a physical book that wasn't well designed and produced. And the likelihood of finding a typo in a professionally published book, at least until recently, was almost nil. A printed book was something that authors and publishers took pride in conceiving and executing, and which readers took pleasure in experiencing in every dimension.

The point is not that we should return all the way back to some golden age of publishing standards of the past. Those days are gone. But we do have a say in what the publishing standards of the future will be. Those standards will be as high as we insist they must be, if we make our expectations known. Or they will be as low as market forces will drive them with our acquiescence.

In a future that will be increasingly dominated by eReaders, the crucial question will obviously be how high will we set our standards for content, because the device will control the delivery. How good do we want that content to be?

We recognize that engineers, doctors, machinists and just about everyone else needs to practice a trade full-time in order to become and remain competent at what they do. And it would be hard to imagine a skill or service that we benefit from that we do not recognize as being worthy of compensation.

Until it comes to creative work. There, we increasingly ignore the fact that a writer, or photographer, or artist needs to work at what they do full-time to achieve the same quality of work as any other craftsperson or expert. But we can't have it both ways – it's not Hemingway *and* $.99 books. It's Hemingway *or* $.99 books. Pick one.

But I would go further. Expecting writers and artists to work for little or nothing is exploitive and wrong, at least if we wish to have access to their work. Luckily for us, there will always be plenty of writers willing to work for free (this site has closer to two million than one million words of my authorship here already, and they're all there for free).

But free writing almost by definition is writing that gets done in the odd hour, with less care, sometimes with less investment in creativity, and almost never with the improving touch of an editor. At minimum such work will appear more sporadically, and only through something close to divine intervention will it be likely to mature into the type of output that we will remember and treasure for the rest of our lives, and that will reach out to future generations of readers as well.

So let me return from the general to the specific.

Once upon a time, about three years ago, I got an idea for a book. Eventually, I started to write that book. My thinking was that I stood a chance of building a following that could lead me to write more books, using my blog as a platform, since I had some thousands of regular readers.

I called that book *The Alexandria Project*, and once it was well under way, I began posting it, chapter by chapter, at my blog. Because it was so time consuming, I had to give up most of the writing that I had been doing up until then on standards and open source topics, because I didn't have enough time to do both. My best guess is that close to 4,000 people read the book, start to finish.

It took me about 1000 hours to write the first draft of the book. When I got done, I completely revised the entire text three times, until I was satisfied that it was ready to publish. That took close to another 1000 hours. Then I began exploring the ins and outs of agents, publishers, and self-publishers. Predictably, I failed to get an agent interested, so I went the self-publishing route, and had to spend over $3,000 to produce a well designed, professionally proofread book in hard cover, soft cover and eBook versions that I could be proud of. Then, I had to confront the question of how I would promote the book.

My thinking was that part of my efforts should be to market the book to those that had read, and presumably enjoyed, the first draft in serial form. To attract their attention, I started a sequel, which I began to post in installments every Monday, and a new series, "Adventures in Self-Publishing," to post on Fridays. These efforts alone required an investment of at least ten hours a week. Then I waited for my first book to become available, so that I could advertise it through the two new series, and enlist the help of those that were following my work to help spread the word.

Eventually, the book came out in eBook form, and I did advertise it through the two new series. Sounds like I had a pretty good plan, right?

Except that it didn't work. At all. Virtually nobody who had read the book the first time it came out, or who was reading the sequel or the self-publishing series, bought it. Even when I dropped the price to $2.99. Just about every copy that sold was purchased via a different promotion or channel.

So the question arose whether I should continue the sequel or not, and if so, to what purpose?

Posting the sequel clearly wasn't selling any books, nor was it likely that anyone reading the blog would buy the sequel, either, if it were completed. If I was to continue to write for free, there were many neglected topics that I could, and from a professional point of view should, be writing about instead, and it was writing about those topics that helps support my day job.

Every author without a trust fund that doesn't achieve commercial success has to face the economics issue eventually. If they can't make a living out of writing, then they can't live to write. And if they can't live to write, then the reading public shouldn't expect a whole lot from their writing.

Here, then, is the take away of this essay: just as you may support public radio with an annual donation, or a local band by buying their CDs, ultimately you will need to put your economic support behind authors if you want to have access to first class work. And it's not a lot to ask. Even a full-priced eBook costs less than a ticket to the movies, and your enjoyment of it will last a lot longer. You can even re-read it.

But that's not all. Today, writers need more than economic support. Remember that in the introduction to this piece, I identified a second problem as well: the decline of the role of the publisher. Authors today need help from readers not only in the form of book purchases. They need help just as badly in promoting their work, because the traditional promotional system is in a shambles, and a new one has not yet risen from the ashes.

So if you read and enjoy a book by a self-published author, tell your friends, or don't expect that that author will follow up with another one, or if they do, that it will necessarily be as good. With today's social media, it will only take a few seconds. Use Facebook, Twitter, or whatever else you use to stay in touch with those you know, and introduce a new author you've discovered to your friends. That's a win/win for all concerned.

But if the price of a movie ticket and the time it takes to send a few Tweets still doesn't seem like a reasonable exchange for the pleasure of reading a good book, you might ask yourself, why not?

Before answering that question, consider how many wonderful books you've read in your life, and what they've meant to you, as well as what the future will be like if the number of wonderful books waiting for you begins to decline. And finally you might want to reflect on what the authors of those books should be entitled to expect from you in return for making these books available.

Personally, I would not want to face a future where the odds of success were so poor that new authors were no longer willing to make the sacrifices necessary to see if they had it within them to create great literature. Or to research and write the kind of critically

analytical non-fiction books that provide a last defense against prejudice, FUD and willful ignorance.

If that's the price of "free," then in my book, the cost of free is far too high.

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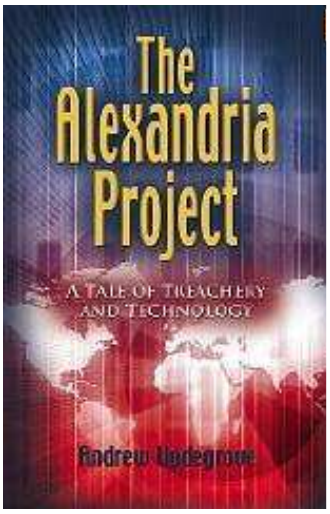
THE ALEXANDRIA PROJECT:

A Tale of Treachery and Technology

Prologue

Andrew Updegrove

The Alexandria Project is available in all formats at
Amazon, Barnes & Noble and iTunes



LATE IN THE afternoon of a gray day in December, a panel truck pulled up to the gate of a warehouse complex in a run-down section of Richmond, Virginia. Rolling down his window, Jack Davis punched a code into the control box, and the gate clanked slowly out of the way. Once inside, he wheeled the truck around and backed it up against a loading dock as the gate closed behind him.

After unlocking and raising the loading dock door, Davis threw a light switch, revealing long rows of pallets, each stacked eight feet high with boxes of paper plates, cups and towels. He closed and locked the loading dock door, and stamped on the brake release pedal of a hydraulic lifter parked against the wall. Counting to himself, he pushed the lifter along the wall of pallets. When he reached row nineteen, he turned the lifter and maneuvered its long tines under the pallet. Raising it a few inches, he backed up until he could swing the pallet through 180 degrees. Then he pulled it behind him until it was back exactly where it had been before.

Davis had plenty of room to work, because where the pallet in the second row should have been, there was only a large metal plate set in the floor. Near the edge was a small hinged panel, which he unlocked with a key to expose a biometric security pad.

When Davis pressed his thumb against it, he heard a familiar click. Stepping back, he watched as the plate swung slowly upwards, followed by the telescoping ends of a ladder extending up from a deep shaft barely illuminated in red light. Grasping the ladder firmly, Davis descended through twenty feet of reinforced concrete while the door overhead swung silently closed above him. At the bottom, he remembered to don a pair of sunglasses before opening an unlocked door.

As usual, even with this precaution the bright lights in the enormous room beyond nearly blinded him. But soon he could clearly see the endless rows of floor to ceiling metal racks crammed with identical gray boxes. Each box displayed a row of rhythmically blinking lights, and sprouted a bundle of brightly colored wires that ran down into conduits embedded in the floor.

The room hummed purposefully with the sound of thousands of cooling fans, one to a box. Davis felt, more than heard, the other vibrations that filled the room, generated by the pulse of the thousands of gallons of cooling water that every minute coursed through the collectors lining the walls of the room, absorbing the waste heat that the racks of computer servers threw off. No heat signature would give this facility away from above; once warm,

the coolant was directed to the water intake of a nearby power plant, happy to take the pre-heated water from wherever it was that it came from, no questions asked.

Walking along the perimeter of the room, Davis could look down through the open metal grid of the floor at the first of many additional tiers of computer servers. But that always made him a little dizzy, so instead he looked out for the guard he was relieving. No surprise – there he was, heading Davis's way, more than happy to call it a day. When they met, the guard stopped to slip on the coveralls he carried over one arm. Like the semi-automatic pistol the guard wore in a shoulder holster, they were identical to those that Davis also wore.

"What's the weather like?"

"Sucks. Sleet and more of the same predicted till morning."

"Figures. Tomorrow's my day off."

With that, the other man was on his way. In a few minutes he would drive off in the truck Davis had parked outside.

Well, the weather won't be bothering me in here, Davis thought. The room was climate controlled to within a tenth of a degree of a chilly 54 degrees Fahrenheit, and well-insulated by the bomb-proof walls and roof installed above. It had taken two years for a fleet of delivery vans to carry all the dirt and rock away that had been excavated from beneath the warehouse. The same vans had returned with cement, steel, and, eventually, those thousands of servers, accompanied by technicians to set them up. The process had been tedious, yes, but not a single satellite picture had ever shown a trace of the ambitious construction project proceeding underground.

Of course, the effect worked in both directions. With no links to the outside world other than a voice line to his supervisor, the whole bloody world could come to an end and Davis would be none the wiser until after his shift was over.

Davis walked up a flight of steel stairs to the bullet proof, glass-walled security booth attached to the wall overlooking the room. His major challenge for the next twelve hours would be to stand watch in that booth without falling asleep. There'd be hell to pay if he did, because another guard, in another security room far away, would be watching him on a video screen.

The row of video displays in front of Davis allowed him to see every inch of the outside of the warehouse complex. Racked on the wall behind him were a high powered rifle and a shotgun, but it wasn't likely he'd ever need to use them. One flip of the large red switch in front of Davis would flood the server room with enough Halon gas to not only put out a fire, but asphyxiate any intruder careless enough to leave a gas mask at home. Not for the first time, Davis wished that the house where he lived with his wife and their two small children could be as well protected.

But the government didn't put as high a priority on protecting suburban starter homes as it did on safeguarding its most critical computer network facilities. Some storage facilities, like those serving the needs of the Pentagon and the National Security Administration, were located not far away at Fort Meade. Others, like this one, were scattered far and wide, hidden in plain sight but highly secure nonetheless. No way was anyone going to crack this nut. Davis was dead certain of that.

If Davis had been able to electronically monitor what was happening on server A-VI/147 on Level Three, though, his confidence might have taken a hit. True, concrete and steel walls, surveillance cameras and Halon gas were more than adequate to protect the physical well being of his facility against anything short of a direct hit by a "bunker busting" nuclear weapon. But the data on the facility's servers had to rely on virtual defenses – firewalls, security routines and intrusion scanners.

And those defenses hadn't been enough. Someone had gotten inside.

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#67 Election Day 2012: What Would Darwin Think?

Andrew Updegrove

Praises be, it's over – over and done with – *finis* – no longer plaguing us and *finished*. I refer, of course, to that quadrennial paroxysm of democratic hysteria we prosaically call a "Presidential Election." Thank God.

Along the way, we heard enough lies, damn lies and Super PAC ads to last us for the rest of our lives, and then some. And early in the process, it seemed like we were living in the middle of the next installment of Men in Black, except that none of the primary candidates went back to their home planets after they were defeated.

At the heart of all this nonsense, though, there is a central reality that never ceases to amaze me: how is it that so many Americans can disagree so fundamentally with each other about so much, each convinced that he or she is possessed of the equivalent of divinely revealed truth while those on The Other Side are possessed by the Devil, or worse?

How is it that so many Americans can disagree so fundamentally with each other about so much?

This divergence of opinion is not simply random, of course. If you boil down all of the points of disagreement, one philosophical difference always seems to emerge. Not the only difference, perhaps, but one that seems to underpin and resonate with any other tenet you may discern amid all of the heated rhetoric and dubious justifications.

That difference boils down to this: do we think that a safe, secure and prosperous future can only be ours if we give the individual the greatest freedom of action with the fewest economic burdens, or do we believe that such a result can only be obtained if we empower the government to look out for all members of society, and accept the costs and impositions on individual action that will necessarily follow from such policies?

Depending on which of these perspectives you may hold, the answers to all of the great questions of the day become not only obvious, but diametrically opposed to those who see the world through the other set of glasses. And never the twain shall meet.

Those that see the world from one of these perspectives with particular conviction sometimes find that it becomes impossible to understand the other side's point of view at all. The result is that the prospect of compromise ceases to be a question of pragmatism, and rises to the level of an unacceptable betrayal of principle.

There does not seem to be any innate logic in who ends up holding which view. Conservatives and liberals can spring from the same parents; can have the same IQs and life experiences; and can grow up in the same communities. And yet each believes passionately in the rectitude of his own world view.

How can such a situation have come about?

I've mulled this over for quite some time, and have concluded that the answer is far simpler than one might assume. Not only simple, but almost unquestionably accurate. But before I proceed to share it, I should warn any Creationists that may have wandered onto this mailing list to read no farther, because in the next sentence I am going to use a word that will upset you.

That word, of course, is evolution. Among all of the theories that I have encountered in my lifetime, the theory of evolution is the most elegant, the most powerful, the most astonishingly versatile, and the most invariably generous in providing a compelling answer, regardless of the question. Unlike abstruse concepts such as relativity and quantum physics, evolution is as easy to apply as it is to understand. Notice something in the living world and wonder how it got to be that way, and you can invariably come up with an evolutionary explanation, usually without even breaking a mental sweat.

And so it is with the existence not only of conservatism and liberalism, but also of the continuing coexistence of each. Let's see why this is, and indeed must, be so by looking at the evolutionary advantages that each perspective can bestow on those programmed to manifest it.

Let's start with conservatism. Imagine that you are a hunter-gatherer, or, in later ages, a farmer. Only by surviving long enough to see your progeny become self-reliant will your genes continue to exist. Keeping all you kill, gather or reap for your family will ensure that those that share your genes will be most likely to survive.

Anything that impedes your ability to feed your family, such as sharing with others, or staying to defend others rather than fleeing with your family, will raise the chance that your individual genetic line will go extinct. Consequently, any genes that might predispose you in that direction would be likely to be flushed from the gene pool, and any that might motivate you to look out for your family would be sustained.

But this does not describe every human being. Instead, we also exhibit something that evolutionary geneticists originally puzzled over: the concept of 'altruism,' meaning (in this context) the taking of actions that are for the benefit of family members, and which might even jeopardize the actor's own survival. But even if the actor does not survive, by reason of his sacrifice his genes might live on through his progeny. Indeed, given the degree of interbreeding within a band, acts of self-sacrifice on behalf of non-immediate family members could still favor the preservation of the commonly held genes that led to such behavior.

Modern evolutionary explains less dramatic acts of altruism by noting that the survival of the individual may also rely on the survival of the band. An individual can be injured, or become ill, or have no luck in the hunt. In each case, the individual and his family must rely on the altruism of other members of their band to feed and protect them in their hour of need. Even the survival of individuals that are past reproductive age can be important because those individuals (e.g., grandmothers) can help raise children – a particularly important role during hunter-gatherer times, when a child that could not yet walk, or was temporarily sick or injured, had to be carried.

Once the evolutionary importance of altruism became accepted, it became clear that the survival of genes that might predispose an individual to share and protect the band could be favored, while those that might lean in the opposite direction could be more likely to reach a dead end, depending on the circumstances.

What we have just described should be starting to sound like what lies at the heart of the divergent viewpoints of conservatives and liberals. The conservative believes that it is his right to look out for himself and his family, that his ability to do so should not be impaired by impositions that he has not agreed to, and that he should not be required to share the monetary fruits of his labors, since that may impair his ability to fend for himself and his family. And the liberal is willing to share with others (through taxation) and accept more constraints on his freedom of action (in the form of laws and regulations) because he believes that he will be better off if everyone is better off.

Sounds pretty neat, doesn't it? But if it's that easy to explain, why do we have both conservatives *and* liberals rather than conservatives *or* liberals? Wouldn't one behavioral strategy or the other have proven to be superior over the millennia, ultimately driving the other out of existence?

Well, no, and that's where evolutionary theory once more provides an answer. Briefly stated, evolution tends to hedge its bets, because the world we live in is dynamic in so many ways.

Consider the example of a long period of abundance, during which either hunter-gatherers or farmers are able to rely on a steady food supply. During such a period, life is easy, and everyone can look out for themselves with little assistance from other members of the band or the village. There is no advantage to sharing, but keeping as much as possible for yourself can allow you to work less, or have higher status. The more successful you are at feeding and caring for your family, the more of your progeny will be likely to survive. And if you are attacked and flee rather than fight and die, your genes will have a chance to carry on.

But now the weather changes, and there isn't enough to go around. The hunter-gatherers need to rely on the kindred bands they intermarry with, some of whom are far enough away that their food supply is less affected. And farmers that are part of societies that have laid stores of grain aside for the benefit of the community will survive to plant their withered crops again.

The point is that one strategy may be more successful in one set of circumstances than the other, but each situation can be expected to arise with some degree of frequency over time. Thus, the prevalence of the gene sets that lean to each perspective can be expected to rise and fall in the near term, but prevail over the millennia, thus ensuring that the species as a whole survives absent some consummate disaster that moots all in-bred behavioral strategies.

To round out our theory, we can presume that we are not talking about a single, dominant Mendelian gene that can flip one way or another, but a series of genes that interplay with each other, resulting in differing degrees of manifestation, as is the case with autism and many other genetic conditions. And thus we have both Tea Party and moderate conservatives, as well as left wing and centrist liberals, too.

I'm sure that I must be only one of many to have reached the same conclusions, so why is a genetic basis for political viewpoint not a default assumption? Presumably because no one likes to think of themselves as some sort of pre-programmed automaton (no matter how much they may act like one – particularly during an election year). Rather, we like to think of ourselves as free agents, endowed with free will and the ability to act as masters of our own destinies.

That's too bad. Why? Because if we were to acknowledge that each of us believes what we believe for a reason, that what each of us believes has helped our direct ancestors to survive for over 100,000 years, and that our species would likely not have survived at all

unless both viewpoints continued to exist, then perhaps compromise wouldn't seem like such a bad idea after all.

I wish, although without much hope, that this theory would spread and become accepted. The reason is simple: it could help break the deadlock in Washington that has cursed us for the last four years. And from a more self-interested point of view, I'm not sure that my own genes can survive another election year like the last one.

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