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FEATURE ARTICLE:

When and How to Launch a Standards Consortium

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Abstract: *The last twenty-five years have been marked by an explosion of consortia formed to develop, promote and/or otherwise support standards enabling information and communications technology. The reasons for forming a new consortium, as compared to adding to the work program of an existing body, include the absence in such organizations of appropriate technical expertise, interest, and/or supporting programs, as well as the benefits to be gained from directing all of the resources and efforts of a new consortium to the achievement of a set of specific objectives. This article reviews the benefits to be obtained from launching a new consortium, the criteria that should be used to determine whether doing so is appropriate, the programs and functionalities available for achieving specific goals, and the stages of institutional maturity at which each function should be added in order to accomplish a new organization's mission.*

Introduction: One of the most successful innovations of the past twenty-five years in the area of collaborative development has been the application of the "consortium" concept to the area of standards creation and promotion. Almost overnight, this inherently flexible approach was adopted by scores, and then hundreds, of ad hoc, self-selecting cadres of stakeholders (usually product or service vendors) to develop, promote and maintain thousands of new standards in the fast-paced information and communications technology (ICT) industry. Today, almost all of the standards in key technical areas such as the Internet and the Web are created and supported by consortia. Consortium-developed standards also predominate in the information technology sector, and, to a lesser extent, in communications technology as well.

Despite this success, the formation of standards-related consortia remains largely limited to the ICT arena, and to new ICT-related standards development initiatives launched in other industries (e.g., automotive, life sciences, and so on).

This selectivity of application provides an answer to an intriguing question: why form new standards consortia at all, given the hundreds of already-existing traditional standards development organizations (SDOs) and consortia?

In this article, I will review the situations where a new consortium should and – as importantly - should not, be formed. I will also provide a decision tree for determining what activities a new consortium should undertake to increase the likelihood of its success, a description of the infrastructural elements needed to support these activities, and an indication of the stage of an organization’s maturity at which the addition of each activity becomes advisable.¹

I When a New Consortium Makes Sense

Why launch a new consortium at all? While launching and operating a new consortium is a low-cost (in dollars) exercise, it demands a meaningful expenditure of time by at least some of its founders. Moreover, in order to achieve success, it must attract a critical mass of members for multiple purposes: first, since the adoption of most standards is voluntary, potential implementers will pay close attention to which vendors have demonstrated their support through membership to determine whether they should pay attention to the new consortium’s efforts at all.

Next, even where the framework for a first specification has been contributed by one or more members, it will usually be necessary for a group of skilled, member-contributed representatives to produce the finally adopted standard. Finally, a standard can only gather momentum through implementation, and the best way for a standard to get off to a fast and successful start is through its members own adoption.

Why, then, would any group of stakeholders undertake the time, cost and risk of launching a new consortium instead of simply taking their project to one of the hundreds of existing standard setting organizations (SSOs) that have already demonstrated their competence and success?

There are four situations that most frequently lead to the formation of a new consortium. In reverse order of frequency, they are as follows:

Displacement of a market incumbent: During the 1980s and 1990s, many consortia were formed by groups of competitors joining together in an effort to displace an incumbent in the marketplace on platform after platform (e.g., desktop, server, mobile device, etc.). Frequently, that incumbent was Microsoft, and the competitors were seeking to stem the software system vendor’s seemingly inexorable march towards dominating both the application software as well as the operating system marketplaces. In some cases, these efforts sought to shore up the position of one or another flavor of UNIX as the operating system of choice before Microsoft’s (then) new Windows NT server operating system could become dominant.²

¹ The observations in this article are primarily based upon my experience over the past 22 years in forming and representing over 100 consortia developing, promoting and supporting ICT standards. A complete list of these organizations can be found at: http://66.223.107.171/practice_areas/consortium.php#CLIENTLIST

² Those consortia included 88open, supporting the Motorola 88000 RISC chip and associated operating system; SPARC International, supporting a similar combo developed by Sun Microsystems; and PowerOPEN, supporting yet another combination, this time based upon a chip design supported by IBM, Motorola and Apple. While each of the

However, most of the consortia formed for this purpose proved to be largely unsuccessful. Today, consortia are rarely launched to pursue such a strategy.

Support of an existing standard: While, as already noted, most information technology, and to a lesser extent communications technology, standards are now developed by consortia, substantial numbers are still developed and maintained by traditional standards development organizations (SDOs) that are either nationally representative (e.g., DIN, in Germany) or nationally accredited (e.g., the c. 200 individual SSOs accredited in the United States by the American National Standards Institute (ANSI)).

Although a number of ANSI-accredited SDOs engage in a variety of standards promotional activities (often, these are trade associations that also develop standards), others restrict their activities to standards development only. In the case of ICT, a great deal of promotional activity is often needed in order for a standard to achieve a critical mass of adoption in the target industry. If the SDO that develops a standard does not include promotional activities in its work program, such a standard may well be doomed to irrelevance before it is even completed. In other cases, a branding and/or certification program may be essential in order to provide the level of assured interoperability and generate the customer demand necessary to produce success. Once again, if the SDO is not interested in facilitating such programs (and many are not), the standard will suffer.

In such a situation, interested members are left with no alternative but to form an auxiliary organization to provide the type of market support needed to achieve their goals. This phenomenon is well illustrated by the several consortia founded to support standards developed by the 802.11 wireless working group of the Institute of Electrical and Electronics Engineers (IEEE).

In the case of the suite of now-ubiquitous WiFi standards developed by this working group, the supporting organization is the WiFi Alliance, which developed interoperability test suites, a certification program, and a consumer-facing branding program to raise customer awareness of "WiFi" branded, compliant products. The efforts of this consortium were instrumental in ensuring that the technology served by the WiFi standards became dominant instead of any of the several other competing, standards-supported technologies.

Some of these standards, supported by their own consortia (e.g., HomeRF) ultimately failed, while others, such as Blue Tooth, found success in their own discrete application areas.³

chips involved achieved varying degrees of success in embedded applications, none of them achieved significant success in the desktop or server markets, which had been the highest priority targets of the joint efforts.

³ The proliferation of consortia in the wireless space may seem at first glance to illustrate either a destructive standards war, or an exercise in wasted corporate resources. I have contended in a prior article that it instead illustrates the way in which consortia can help new technologies enter the marketplace more swiftly and productively, because multiple technologies can vie in parallel rather than sequence, with the best technologies ultimately finding success in the most appropriate niches. See, [Standards Wars: Situations, Strategies and Outcomes](http://www.consortiuminfo.org/bulletins/mar06.php#feature), ConsortiumInfo.org, Standards Today, Vol. V, No. 3, March 2006, at <http://www.consortiuminfo.org/bulletins/mar06.php#feature> Note, however, that short range wireless networks, which at first seemed to represent a single market opportunity, in fact contained multiple niches demanding multiple standards-based solutions, depending upon technical constraints such as range, data transmission speed, and power

The example of the WiFi Alliance was picked up by IEEE members supporting another standard released by the 802.11 working group, the WiMAX medium range, broadband wireless standard, who formed the WiMAX Forum. Indeed, in the case of a standard under development by the IEEE 802.15.3a working group, matters became so contentious that competing working group members incorporated two separate promotional organizations even before the final adoption vote was taken.⁴

Absence of alternatives: While the ranks of existing SSOs are large, this does not guarantee that there will always be an existing SSO that is “right” for a given purpose. The reasons are several:

- **Lack of domain expertise:** The ICT industry is constantly giving birth to new technologies, products and services. As a result, no existing SSO may have the technical competence to undertake the new work.
- **Lack of interest:** Not surprisingly, existing SSOs must balance their limited resources against the priorities of their members. Unless a sufficiently large number of members expresses an interest in a proposal to launch a new working group, the SSO is unlikely to support it. At the same time, non-member proponents of the new standards proposal may not wish to pay full dues to an organization in a situation where they have an active interest only in the proposed standard.
- **Blocking members:** As a standard becomes established, some companies are likely to be more successful than others in garnering large shares of the resulting market for the standardized products or services. Where new standards may challenge existing ones, the members of an otherwise most-appropriate SSO that are doing well supporting the existing standard may have no desire to return to a level playing field where their competitors may meet, or exceed, their own success. Since SSOs are membership organizations, management is unlikely to press for the launch of a new working group proposed by one set of members in the face of strong opposition from another.
- **Focus, speed, and control:** With the advent of the Internet, the Web, and now the Cloud, the success or failure of new technologies, products and services has become ever more dependent upon the availability and wide adoption of the interoperability standards essential to allow these technologies to work. While the specific technical architecture to be formalized in some ICT standards may be obvious and non-controversial, very often multiple approaches will be feasible, with each having great strategic significance for one or more individual companies. For this reason,

constraints, allowing for multiple ultimate winners. Had there been fewer contenders, fewer viable solutions for more specialized uses would have emerged in the same time frame. Wireless telephony, in contrast, by definition provided the opportunity for a true standards war. European regulators avoided that result by requiring a single standards-based solution, while the United States permitted multiple technologies to vie for supremacy. Economists were thus provided with a perfect opportunity to assess the comparative benefits of each approach, but have not as productively explored the example provided by the first generation of short range wireless standards.

⁴ The result was that while many competing proposals eventually merged into these two final alternatives, neither succeeded in securing the necessary 75% vote to become an IEEE standard. As a result, IEEE disbanded the working group, and the two groups of competing companies took their specifications – and consortia – into the marketplace to battle for supremacy.

companies that will necessarily risk billions of dollars when they commit to a new technology have great incentives to try to ensure that the standards that are ultimately approved serve their interests best.

Even where significant competition over the appropriate technical approach to take is not expected, moving markets to buy new products and services takes great effort. This is especially true where value can only be delivered through achieving network effects.⁵ Given the rapid advance of technology, achieving network effects quickly is essential, and requires marshalling the coordinated efforts of many types of stakeholders.

Establishing network effects is not always realistically achievable through existing SSOs, which already have their own priorities, and which may or may not have all of the capabilities that may be necessary to achieve the desired results. With so much riding on quick adoption, it is not surprising that vendors will be more than willing to commit the time and resources needed to launch yet another consortium.

Nor should it be a surprise that the largest volume of consortia continues to be formed year after year to support new products, or that whole new generations of specialized SSOs are periodically launched to develop and promote standards to enable sweeping new markets, such as mobile devices and applications. Indeed, it is common to see as many as a half dozen new consortia announced at a major trade show showcasing a new technology (such as wireless), business segment (like the SmartGrid), or area of increasing interest (e.g., security).

Unique benefits: advantages of forming a new consortium over taking the work to an existing SSO in such situations include the following:

- **Visibility:** Nothing in the standards world catches the attention of the marketplace more forcefully than seeing an impressive array of global companies announce a new consortium, because the news signals that the landscape has just shifted for the entire industry. If the founding member list is impressive enough, competitors and customers alike will need to assume that the goals of the new SSO may well be achieved, and that their own decisions must adapt appropriately.
- **Commitment:** In a related vein, by forming a new organization the founders signal their commitment to the new technology and its standards in a way that merely announcing a new working group in an existing SSO can not achieve. In other words, the founders are signaling their determination to do whatever it takes to ensure that the standards in question will become widely adopted, once again raising the credibility of their work product.
- **Identity:** By its existence and the combined support of its members, a dedicated consortium helps build the brand of the standardized products and services that it helps enable. This is particularly true in B2C (Business to Customer) space, where the name of the standard frequently becomes a

⁵ The “network effect” describes the increasing value that a network provides to its users as more and more individuals and/or businesses connect. More obviously, the challenge to achieving a network effect for a product can be described by noting that it is much easier to sell the millionth telephone than the first. The same challenge applied to the first railways, gas stations, and so on down to the iPhone App Store and Facebook of today.

commonplace in stores, whether or not the consumer realizes that the word they associate with a product or key product feature is in fact the name of the interoperability standard that allows it to work. Examples include USB, BluRay, Bluetooth, WiFi, and many more.

- **Control:** When new working groups are chartered in existing SSOs, it is usual to allow any member to propose the way forward. One, two, or even dozens of approaches may be placed on the table, with the final choice being made through a consensus-based process. In some cases, this can be the result of compromises agreed to “in the hallways” between competing proponents, but ultimately, only a single standard will issue. By forming a new SSO based upon a specification they have already developed, vendors with a stake in taking a particular technical approach can ensure that the standard they make available to the world will reflect their own preference. Whether or not the members will be successful in persuading the marketplace to adopt the standard will in large part be a result not only of the quality of the standard and the appeal of the technology it supports, but of the combined market power of the members committing to implement the standard.
- **Strategic effectiveness:** A new consortium can undertake all of the closely tailored projects and efforts that may be needed to achieve success (on which more later), and alter the mix as time, experience and the SSO’s fortunes direct.
- **Resource efficiency:** 100% of the resources of a new consortium can be used to achieve its mission.
- **Influence:** A stand-alone consortium can often form liaison relationships with other SSOs more easily, and through them influence the evolution of other standards and practices in the area of their joint interest. Such collaborative efforts can help avoid unnecessary technical overlap and redundancy in work product, and to increase synergy between the new consortium’s standards and those of other SSOs that are likely to be used in common frameworks.

It is these advantages that continue to drive the formation of new consortia as new technologies emerge and old ones evolve. To once more use the wireless marketplace as an example, the rapidly proliferating and diverse range of wireless technologies, and their supporting SSOs, today includes the following organizations (among many others): Near Field Communications, which enables “contactless” communication between cards and readers ([NFC Forum](#)); RFID tags for inventory control and other purposes ([RFID International Business Alliance](#)), DASH7 long range, low power sensor communications ([DASH7 Alliance](#)); Profile, for self-powered monitoring and control of sustainable buildings ([EnOcean Alliance](#)); as well as the multiple standards supported by the venerable IEEE.

Today, the formation of consortia focusing on wireless technology continues apace, as new market opportunities emerge in areas such as mesh networks, “Femtocell” networks, SmartGrid applications, and much more.⁶

II How to Structure a Consortium for Success

Once a decision has been made to launch a new consortium, the question turns to its design. Whether or not the consortium will succeed or fail will depend on how skillfully decisions are made at this point in time. Those decisions fall into two major categories:

Structuring to facilitate recruitment: As already noted, the success or failure of a standard is ultimately determined as much by the membership its supporting SSO attracts as by quality and value of the standard itself. Achieving the “right” membership involves satisfying the following criteria:

Balance: While a standard can achieve success through adoption by only a small group of companies where those few companies dominate the marketplace, more often the niche in question will be more diverse, and achieving success will therefore require implementation by a large group of companies. Among the criteria that potential implementers will take into account in making their decision will be whether the process that has created the standard and will continue to maintain it is reasonably open and neutral. If the answer is yes, than they will feel secure that the process will not be managed for the benefit of the few at the expense of the many.

On the other hand, if those that found a consortium restrict its membership in a discriminatory fashion, or structure it in such a way as to sequester control in the hands of a single type of company (e.g., semiconductor companies) , then other companies (in the former case) or types of companies (in the latter) will justly fear that their interests may be sacrificed, and that implementing the standard may be unwise.

Value Propositions: The way to ensure a balanced membership is to ensure that the governance structure of an SSO demonstrates equality of access to all types of stakeholders, at all levels of membership, and to tailor membership classes in such a way as to provide a “value proposition” for each type of stakeholder: in other words, a package of benefits that the category of member in question (e.g., vendors, customers, government agencies, academia, and so on) values at a price that it can afford and that seems appropriate to its needs. Often, this will involve scaling fees by revenues, in the case of for-profit companies, and offering dramatically lower fees for the same privileges, in the case of government, academic and non-profit members.

I will not go into further detail in this article on the topics of governance, value propositions, dues structures, and other topics central to the success of an SSO,

⁶ For a much more extensive list of SSOs active in the wireless industry, see the [Wireless and Mobile sublist](http://www.consortiuminfo.org/links/) of the Standards Setting Organizations and Standards List at the author's ConsortiumInfo.org Web site, at: <http://www.consortiuminfo.org/links/>

because I have dealt with them extensively in the [Essential Guide to Standards](#), both from the perspective of the potential member evaluating a given SSO, in the section titled: [Participating in Standard Setting Organizations: Value Propositions, Roles and Strategies](#), and from the founder point of view, in the section titled: [Forming a Successful Consortium, Part I – Business Considerations](#).⁷

Structuring to provide essential functions: It is useful to think of the consortium concept as a flexible participation and governance framework associated with a menu of operational modules (some with sub-modules), each of which is intended to enable the accomplishment of an identifiable goal. “Building” a consortium therefore entails a three part process: definition of goals, identification of the activities needed to achieve those goals, and incorporation of the appropriate programmatic modules into the structure of the new organization.

Using this approach as a construct, it is possible to create an outline that assigns the appropriate modules to the goals most typical of the founders of standards development and other standards-supporting consortia. In each case, the ultimate goal is assumed to be securing the wide-spread adoption and ongoing implementation of an effective, useful standard.

Standards Development: Many, but far from all, consortia will include as their primary function the development of one or more standards. The submodules of creating a successful development process are as follows:

- **Technical Process:** An effective process requires rules and procedures to regulate its actions, avoid disputes, and provide guidance to those charged with administering that process. These rules address (among other topics): who may participate; how voting is conducted and when; which governing bodies within the SSO must approve a standard, and in what order, and when; and how a standard is maintained over time. The goal should be to incorporate existing best practices into the process document adopted by a new SSO rather than reinventing the wheel.⁸
- **Intellectual Property Rights Policy:** The implementation of many ICT standards may unavoidably entail the possibility of infringing the patent claims of members or third parties (usually referred to as “Necessary” or “Essential” claims). While nothing can be done to require non-members to license such patent claims on “reasonable and non-discriminatory” (RAND) terms, members should be required to at minimum disclose whether or not they have necessary claims, and if so, whether or not they will license them on RAND terms. Some SSOs go further, requiring members of working groups, or even all members, to do so, while others go further still, prohibiting member-owners of necessary claims to charge a royalty or other fee at all. It is essential that a new consortium have a policy regulating such intellectual property rights (IPR); indeed, most large companies will refuse to join until they can review it and find it to be acceptable. It is equally important that the specific terms of such a policy (which will frequently vary

⁷ The section of the *Essential Guide* titled [Forming a Successful Consortium, Part II: Legal Considerations](#), as well as other chapters mentioned below, will also be of interest to those forming a consortium.

⁸ For further guidance, see the *Essential Guide* section titled [Creating a Successful SSO Training Process](#).

by industry and technical area) will be deemed to be acceptable by the companies targeted for membership.⁹

Implementation facilitation: SSOs often develop other technical work product that can make standards implementation more attractive, risk free, or simple. Those deliverables include the following:

- **Reference implementations:** Reference implementations (most frequently software) are actual products, or product elements, that can be used by, or incorporated into the products of, members (and often non-members as well). The value of such deliverables often lies not in the avoided costs of development for licensees of the reference implementation, but assurance that inclusion of the software in question will not infringe on the patent claims of members that are not available for license on RAND terms. In such a case, members agree not only to license their necessary claims, but agree that the reference implementation will not result in the infringement of any of their other patent claims, thereby creating an IPR “safe harbor” for implementers (at least to the extent of member patent claims).
- **Certification test software:** As discussed in greater detail below, certification can involve a range of procedures. Where the creation of an actual test suite has been funded by the SSO or by one or more of its members, the same test suite can be used to help an implementer debug its implementation, thereby saving time, expense and trouble.
- **Guidance:** SSOs often create a variety of deliverables to make it easier and more attractive for members and non-members to implement their standards. These can include implementation guides, responses to frequently asked questions, and training materials.

Promotion: In situations where a decision is made that a new organization is needed, it will almost always be the case that the market will need to be educated (and often cajoled) into adopting the resulting standards. By forming a consortium, a mechanism is provided whereby multiple members can collaborate on promotional and educational efforts, thereby leveraging their joint efforts to greater effect. It is important to note that the key role of the consortium is to facilitate the efforts of its members rather than to conduct all of the required activities itself, since “industrial strength” global public relations and advertising campaigns lie far beyond the resources of almost all SSOs. Those efforts that a consortium can conduct include the following, and are usually overseen by a Marketing Committee that may in some cases be as active as the Technical Committee:

- **Developing messaging:** For purposes of promotion, standards are just as much products as are any tangible goods. Before they can be effectively promoted by a consortium and its members, proper messaging should be agreed upon so that the marketplace hears a consistent story, and so that the impact is cumulative. Messaging is incorporated into key deliverables such as talking points, press releases (usually including quotes from influential members), and collateral marketing materials that members are encouraged to distribute.

⁹ For further guidance, see the *Essential Guide* section titled [Intellectual Property Rights \(IPR\) and Standard Setting](#).

- **Public relations:** Consortia with an adequate budget will usually either hire a third party PR firm, or hire staff able to draft and circulate press releases, arrange speaking dates for consortium representatives, communicate with the press, and assist in the production of marketing materials.
- **Face to face meetings and trade shows:** Most consortia hold public meetings at which they seek to communicate not only with members, but also the press. Some go further and invite non-members, or even manage (or partner with others to manage) full fledged trade shows that promote public awareness of the consortium, the products and services that its standards enable, and their positive impact on the marketplace. Consortia frequently send speakers to third party trade shows as well.

Education: SSOs often create deliverables that raise non-member awareness of the need for and benefits obtainable from the standards the SSO supports. These materials can include White Papers (sometimes commissioned from analysts and other third parties), "success stories" provided by implementers, and market studies.

Public advocacy: While most SSOs do not engage in actual lobbying, many may allocate some resources to making governments aware of their standards and their benefits. A smaller number engage in more serious efforts to influence legislators for a variety of reasons (e.g., to encourage governments to forego imposing regulations in favor of allowing the SSO to provide such standards as may be necessary to achieve a given purpose).

Implementer credibility and customer assurance: A standard is able to achieve only as much credibility as the products or services that implement it earn in the marketplace. If, for example, an implementer claims compliance with an interoperability standard and a customer finds that the supposedly compliant product does not "plug and play" with its other compliant devices, then it will be left to wonder whether perhaps it is the standard that is defective rather than the product. The ability to ensure reliable, expected performance can therefore be an invaluable tool to build confidence, and therefore purchasing desire, in potential customers. SSOs provide this function in several ways:

- **Product Certification:** While certification may be mandatory in many product areas as a precondition to successful entry into global commerce, or in order to meet safety or health regulations, in the ICT industry it is undertaken (when it is undertaken) most frequently as a way to reassure potential customers (business or consumer) that a vendor's products or services comply with the standard being certified, and will therefore perform as advertised in the appropriate respects. Certification norms vary widely in the IT industry, in part because developing the necessary test suites is typically quite expensive, and also because establishing a credible certification program is time consuming and requires ongoing management time to supervise. For this reason, certification programs range from the

very light (self-assertion of compliance) to thorough (testing by an SSO-authorized third party test labs).¹⁰

- **Non-Product Certification:** Services, security and other non-tangible, standardized processes are often certified as well. Unlike products, which are usually tested once (either individually or by representative lot samples), non-tangible processes often require periodic compliance testing to maintain certification. Instituting such testing may require the SSO to also train, test and certify those third parties (for a fee) that it authorizes to conduct such testing.
- **Branding:** Related to, but distinct from, certification is branding, which in the case of SSOs is the building of customer awareness in the value of products or services compliant with a standard, as demonstrated by an easily recognized trademark (usually associated with a logo). In the case of goods sold business to business (B2B), there is typically less interest in investing in the development of a brand, but in the case of B2C goods, the value can be high – WiFi and Bluetooth once again providing excellent examples. Launching an effective branding campaign involves multiple elements, including artistic and PR development of the brand, legal registration and ongoing maintenance (nationally or globally) of the associated trademarks and logos, licensing and policing their use, coordinating member promotion of the brand, and more. After initial startup costs, branding can provide significant additional revenue to an SSO through the payment of trademark licensing fees.¹¹
- **Plugfests:** The creation of standards inherently involves balancing the benefits of voluntarily restricting a design at one level while still allowing competitors to compete by building differentiated value above the layer of standardization. In the case of dimensional standards, assuring 100% physical interoperability (e.g., for a light bulb and its socket) is not difficult. In the case of ICT standards, however, there is not only value in making a standard no more restrictive than necessary, but it may be difficult, impossible, or unacceptable to members to achieve such specificity that a compliant product will reliably interoperate with other compliant devices simply by complying with the standard.

A popular way to close this interoperability gap is for an SSO to sponsor “plugfests,” at which competitors can test their pre-release products with other compliant products and work out any remaining issues. For obvious reasons, these are carefully controlled events, conducted under strict non-disclosure rules, as vendors have no interest in informing their competitors of the details of their products (or even their existence) before they have been publicly released.

Training: Often, the availability of various types of training may facilitate the rapid uptake and success of a standard. In the case of individual or process standards that are supported by certification, this is especially so. In some cases,

¹⁰ For further guidance, see the *Essential Guide* section titled [Certification Testing and Branding](#).

¹¹ *Ibid.*

training will be supplied by third party service vendors that take advantage of the market opportunity. In others, the SSO may provide training, which can often supply a welcome source of additional revenues.

Intersections with the global standards infrastructure: Standards rarely exist in isolation, and in the ICT space, it is rare for a single SSO to develop all of the standards that are needed to serve the needs of a given industry niche. Indeed, with the explosion of mobile devices, a single hand-held product may need to comply with literally hundreds of connector, wireless, chip, audio, video, internet, Web and other standards. Ensuring that all of these standards not only play nicely together on the same device, but that their use is affordable and as simple to implement as possible is no mean feat. SSOs work towards achieving this goal in a several ways:

- **Liaison relationships:** A typical successful SSO will maintain formal relations with 40 or more other SSOs, with the number varying largely with the organizational density of the relevant market sector(s) that the SSO serves. These liaison relationships are either general or specific, with the former intended to maintain the type of ongoing communications between the two SSOs needed to avoid needless duplication of efforts and maximize the synergy of the output of the partners. Such relationships are usually limited to information sharing, and permitting representatives of the two organizations to attend each others' meetings.

Specific relationships can, however, vary widely, providing for joint development of standards or other work product, collaborating on certification, or otherwise working together on matters of mutual interest or concern.¹²

- **Submission of standards to other SSOs:** Consortia do not always wish to maintain their standards in the long term, or may wish to have a standard adopted by a more established SSO for purposes of gaining greater credibility. In the first case, the existence of the consortium may be brief, ending when its standard is complete and accepted by another SSO. In other cases, it may be the other SSO that approaches the consortium and expresses interest in adding one of the consortium's standards to its own portfolio. Finally, an ICT consortium may wish to submit a standard to Joint Technical Committee 1 of ISO/IEC for adoption through one of several processes (e.g., the "Fast Track" through ECMA, a European-based SDO with a special relationship with JTC 1, or in its own right through the Publicly Available Standard (PAS) process, after the consortium qualifies as a PAS Submitter). In this case, the standard is reformatted to conform to ISO/IEC requirements and goes through an abbreviated (six months, if all goes well) process that allows comment by eligible JTC 1 national members on the proposed standards. Those comments can result in changes prior to final adoption.

¹² Liaison relationships are typically formalized under a short "Memorandum of Understanding" (MOU) that is high level, often non-binding, and typically terminable without cause by either party on short notice.

III Putting it all Together

With the above modules in mind, it may be useful to provide some examples of how various types of consortia may be created by assembling the parts relevant to its mission. Over time, this arrangement can, and should, change as the consortium's mission and the marketplace evolve. For purposes of demonstration, I will use the following typical consortium business cases. However, this list is neither complete, nor should the delineations between the examples given below be regarded as always being clear.

- **Single product standard, transitory consortium (SPST):** Typically formed for a specific need with either no desire, or with the express intent, not to become institutionalized. As a result, this type of consortium will hand off the standard not long after its development is completed.
- **Single product standard, ongoing consortium (SPSO):** Same situation, except the members wish to continue to maintain and promote the standard.
- **Single product standard promotional consortium (SPSP):** The consortium has been formed to support the work of another organization that does not provide services other than standards development.
- **Multi-product standard, ongoing B2B consortium (MPSO):** Typically formed to support a new market niche or product type.
- **Single or Multi-product Brand standard, ongoing B2C consortium (S/MPBSO):** Typically formed to not only develop, but also brand standardized products.
- **Process standard consortium (PS):** In this case, the standard(s) involved are for intangible attributes that are not tied to a single standard (e.g., effective security, which can be achieved through a variety of means of the user's choice).
- **Individual or business standard consortium (IS):** Often involving skills certification. Usually, the SSO will be a trade association providing multiple other services to members not addressed in this article.

Applicability of Functionalities: The tables below indicate what types of activities these consortium type would be most likely to undertake, and the degree to which these activities would typically be necessary or otherwise. In the table below:

- **E** indicates that the function would usually be essential to meet the needs of the business case
- **T** means that the function would typically but not always be supported
- **O** means that the function is an option that might or might not be found in a consortium of this type, depending upon the particular realities of its mission, marketplace, members, and so on

- **N** means that this function would rarely, if ever, be found in a consortium of this type

In the case of any given SSO, the actual range of functions can be expected to vary, so the table below should be regarded as illustrative rather than dispositive.

Table 1: Standards Development and Implementation Facilitation

Consortium Type	Technical Committee	IPR Policy	Reference Implemen.	Certification. Test SW	Guidance
SPST	E	E	N	N	N
SPSO	E	E	O	O	O
SPSP	N*	N*	O	O	O
MPSO	E	E	O	T*	T
S/MBPSO	E	E	O	E	T
PS	E	E	N	N	T
IS	E**	T***	N	N	E

* M, if the consortium manages a certification and branding campaign

**"Standards Committee" would be a more appropriate name in this case

***The IRP Policy would usually relate only to copyright and trademark, and not patent, matters

Table 2: Promotion, Education and Advocacy

Consortium Type	Marketing Committee Functions				Education	Advocacy
	Messaging	PR	Meetings	Trade Shows		
SPST	O	N	O	N	N	N
SPSO	E	E	E	O	O	N
SPSP	E	E	E	O	E	O
MPSO	E	E	E	O	T	O
S/MPBSO	E	E	E	O	E	O
PS	E	E	E	O	E	O
IS	E	E	E	E	E	O

Table 3: Implementer Credibility and Customer Assurance

Consortium Type	Product Certif.	Non-Prod. Certif.	Branding	Plug-fests	Train-ing	Liaisons	Submis-sions
SPST	N	N	N	N	N	N	E
SPSO	T	T	O	O	O	T	N/A
SPSP	T	T	T	O	T	T	N/A
MPSO	T	T	O	O	O	E	O
S/MPSO	E	E	E	T	T	E	O
PS	N/A	T	O	N/A	O	E	O
IS	N/A	E	E	N/A	E	O	O

Timing: Happily, not all of the functions described above need be launched simultaneously with the formation of a new consortium. Indeed, many would be irrelevant until a later point in the process, while others would necessarily follow in time due to dependencies on the prior completion of other work product or activities. The following table illustrates a typical roll out, and in some cases termination, of activities for consortia generally. The table correlates to the following development phases of a typical consortium:

- **Pre-Standard Release:** From date of public launch until the date the consortium’s first (or only) standard is publicly released.
- **Post-Standard Release:** From the date of public announcement until the standard has (hopefully) begun to become widely adopted.
- **Maturity:** The ongoing, stable period of operations during which standards are maintained, new work is chartered, and a variety of supporting functions are conducted to maintain the health of the standardized ecosystem the consortium was created to create and/or serve.
- **Wind-down:** The period during which it may become apparent that a given consortium’s mission has been completed, its standard(s) have ceased to be relevant, or the rationale for the continuing existence of an independent SSO for maintenance purposes is no longer cost-effective.

Table 4: Commencement and Termination of Functions

Function	Pre-Standard Release	Post-Standard Release	Maturity	Wind-down
Standards Development	X	X	X	Phase out
Standards Maintenance		X	X	Phase out
Implementation Facilitation		X	X	
Promotion	X	X	X	
Education	X	X	X	
Public Advocacy		X	X	
Certification/Branding		X	X	
Training		X	X	
Liaisons		X	X	
Submissions to other SSOs			X	X

IV Summary

Over the past 25 years a great deal of experimentation, emulation, and evolution has occurred in the area of consortium formation. Today, the state of the art continues to develop, both through refinement of existing practices as well as in response to changing market realities. The result is that it is far easier today to know when it is (and is not) appropriate to form a new consortium, as well as how to go about structuring one that will be effective and successful.

That said, the modular approach described above has necessarily been presented in a superficial way, and does not explore all of the criteria that should go into designing a new organization, the relative importance of given functions to achieve particular missions, nor all of the constraints (e.g., budgetary) that may bear upon the ability of a given new initiative to realistically maximize its efforts.

As a result, it is very important that the would-be founders of any new consortium enter into a deliberative exploration and planning exercise that carefully defines and scopes its mission, segments the pool of potential members needed to achieve success, assesses their level of interest, lists the functionalities needed to achieve the initiative's goals, and projects the budget needed to support those functions. Only then can the viability of the initiative be realistically assessed, and a workable plan for moving forward be developed.

Happily, consortia of all sizes – from a handful of members to thousands – and budgets – from \$10,000 to \$10 million a year – continue to be launched on a weekly basis. With proper planning and a real mission, there's always room for one more.

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