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TRENDS

NETWORKED PEER PRODUCTION: NEW TOOLS TO SOLVE OLD PROBLEMS

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Introduction: Traditional, specification-based standards have many virtues. The process whereby they are created is well developed and time tested, and the beneficial results that can be obtained from them are similarly established.

But while such standards can make new products possible, accelerate their market acceptance, increase consumer choices and lower costs, they are not without their weaknesses as well. Those weaknesses include the difficulty of addressing intellectual property rights (IPR) issues, the vulnerability of the standard setting system to be "gamed" by devious participants, and the launching of rival standards efforts for reasons of proprietary advantage rather than technical merit, among others.

What distinguishes a commonality? A commonality has three essential attributes. It is: (1) whatever tool(s) we need, (2) that we need to agree on, (3) in order to do what we agree needs to be done.

Many of these vulnerabilities arise from the nature of this type of standard, which is well suited for creating interoperability among users. As the number of compliant products grows, so do the benefits to the owners of those products, as the "network effect" takes hold (e.g., the value to the owner of a telephone or a desktop computer increases with the number of users linked together on the same network).

This network effect also enables the creation of many different implementations from one point of origin, each with its own virtues of lowered cost, integration with other features and supporting services. But until a critical mass of vendors actually adopts and builds to the specification, a user is no better off using a standards-based product than any other market offering.

As we have pointed out in the past (see *A Look into the Future: Not "Standards" but "Commonalities"* www.consortiuminfo.org/bulletins/feb04.php#editorial>), we believe that the traditional concept conveyed by the word "standard" is too narrow to address the needs of a modern, networked world. While specifications serve a vital purpose, they are not optimal (and in some cases, even capable) of solving all problems.

Instead, we think that a better term is "commonalities," a word that we believe is both broader and more conducive to thinking creatively. What distinguishes a commonality? As we have proposed before, a commonality has three essential attributes. It is: (1) whatever tool(s) we need, (2) that we need to agree on, (3) in order to do what we agree needs to be done. Depending on the goal to be achieved, traditional tools that fall within this definition include not only specifications, but also reference implementations, test suites and best practices guides.

But with the emergence of the Internet and the Web, a new type of commonality has become possible: the end product itself, rather than the tools to create or connect products. While this new type of commonality, created through "networked peer production" (NPP) naturally has its own issues to address, it also has distinct virtues that avoid or address many of the problems inherent in traditional specification-based standards. This article will explore some of those differences, as well as the advantages that employing NPP methodology may offer to create new and useful commonalities.

Starting at the end and working back: An increasing number of Web-based projects are being launched that involve networks of people (often in large numbers) working to create something that is typically made available to all without charge. While the most high-profile example is Open Source software, which is made available using the GNU Public License and other variations on the same theme, there are many other projects that do not involve creating software.

These projects are as varied as they are numerous, ranging from Project Gutenberg (which is making thousands of "out of copyright" books electronically available without charge), to the Creative Commons (which is creating the legal tools that permit authors to make their work product freely available on less than a full copyright basis). New efforts are being launched virtually on a daily basis.

By starting at the end (the product itself) rather than the definition of a product or an interface (the traditional specification approach), many of the issues that arise under traditional standards are rendered moot. Consider the following:

- ***Lack of Profit Motive:*** First and foremost, when the goal is implementation without remuneration, many of the normal competitive forces that can subvert traditional standards efforts disappear. These forces include the following:

    - ***Subversion of Quality:*** In traditional standard setting, some participants have a greater incentive to adopt a particular technical approach than to achieve the best technical result.

    - ***Delay of Uptake:*** The broad adoption of standards creates losers as well as winners. Those that fear the erosion of existing proprietary advantages often work to delay the launch or thwart the success of a new standard.

    - ***Incentives to Launch Competing Standards:*** While avoiding standards implementation royalties is often a goal in some industries (e.g., software), the ability to charge patent royalties is tolerated (or even expected) in others, such as the telecommunications space. Where the royalty potential is very great, a "winner take all" competition can result (as in the current battle over the next-generation DVD standard). In such a case, the players vie for licensing income rather than settle for the benefits of smooth and rapid market adoption of the next generation of their products. The results can be slower uptake, higher prices, and (at times) dual standards competing in the marketplace to the detriment of vendors, end-users and intermediaries alike.

    - ***IPR Issues:*** Because traditional standards efforts are intended to foster volume sales, there are incentives for participants to embed patent claims in standards, and for non-members to assert similar claims that they may own.

    None of these motivations need exist in the case of an NPP. With a single, free implementation, no participant has a reason to work against quality or immediate availability. Similarly, there is no motivation for competition (besides human nature). For example, if a second group of individuals decided that they wished to make copyright-lapsed books available on the Web, they would have no obvious motivation to input books that were already available at the Project Gutenberg site. Instead, they would be more likely to collaborate with Project Gutenberg, offering to take responsibility for a particular genre of literature, or perhaps add commentary or bibliographic material in support of the library. And (expect in the case of Open Source software) there is likely to be little potential for patent infringement, nor significant profit to be gained from a patent assertion even if infringement did exist.

- ***Independence from the Network Effect:*** The output of most NPP collaborations is valuable at the moment of creation, because it is an end product. While some work product (such as Open Source software) can increase in value with broad adoption, much of this software is immediately useful even on a single platform. Other work product (such as this website or Project Gutenberg's output) is not only valuable and usable upon creation, but is totally independent of the efforts of third parties.

- ***Easy initiation:*** The nature of the Web makes the unification of kindred spirits with public-spirited goals uniquely possible. Historically, non-profit activities were launched through one-on-one interactions. Necessarily, this limited the pool of potential supporters to those that were local, and known – a sufficient constraint to relegate many fine ideas to the status of unfulfilled visions. In contrast, Web-based NPPs can draw on a global reservoir of potentially kindred spirits. In the case of Open Source, venues have already grown up (such as SourceForge) that make gathering a community of interested parties quite easy.

- ***Low Overhead:*** While historical standard setting efforts have not been large-budget affairs, they have nonetheless required the investment of time and travel expenses by those that have wished to participate, as well as the funding of the infrastructure needed to host the process, and publish and maintain the standards developed. The result is that they have been primarily commercial endeavors, with some input from academia and government but little end-user involvement. Web-based NPPs, in contrast, require almost no infrastructure at all.

Where do we go from here? Of course, NPP projects are not without their own limitations. Without a profit motive, there is far less market-imposed discipline, and an NPP can be as on-target, or as clueless as its members lead it to be. In the case of Linux, for example, there are a number of missing features that are of greater interest to end-users than to the volunteer engineers that have contributed to the creation of Linux to date. Similarly, NPP projects can wither as well as flourish, and are dependent upon the visionary leadership of their founders.

But as with the consortia that burst upon the traditional standard setting scene in the late 1980s, the NPP model will evolve. We are still in the early exploratory stage of the NPP concept, and a wide variety of governance and process experiments can be expected to arise before consensus begins to emerge over what practices may best support the success of such an effort.

We believe that the NPP model is one of great interest, and holds profound promise across many areas of non-profit endeavor. We also believe that this methodology is uniquely suited to create useful commonalities that at times will be superior surrogates for traditional specification-based standards. In consequence, we hope that the creation of NPPs and the adoption of their work products will be embraced and supported by the standards community.

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