**Boundaryless
Information Flow**

Open Standards - Open Source
The Business, Legal, and Technical Challenges Ahead

June 24-25, 2003, Minneapolis, MN, USA

Proceedings
Synopsis

THE *Open* GROUP

Synopsis of "Open Standards – Open Source: The Business, Legal and Technical Challenges Ahead"

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Summary

The meeting was held June 24-25, 2003 at the University of St. Thomas (which also co-sponsored the event) in Minneapolis, Minnesota. The one-and-a-half day conference brought together senior executives from a wide range of organizations to discuss and evaluate the current state of Open Source. Representatives from Government, Business, and Academia were all on hand to offer unique perspectives.

The meeting comprised four panels: Business, Technical, Legal, and Social and Ethical, each of which featured an introduction of the issues and follow-up with an interactive discussion between the speakers and the audience. The aim was to capture and publish the issues discussed in order to raise the industry awareness of the benefits of Open Source.

The four panel discussions examine the issues surrounding Open Source from various perspectives:

Business
• Making the business case for Open Source
• The business drivers for Open Source
• What is the future of Open Source?

Technical
• Is it robust, scaleable, portable, interoperable?
• Is it feasible for SME's (small, medium enterprises) to use Open Source?
• What is coming down the road?

Legal
• Understand licensing and distribution
• Managing intellectual property rights
• Are there any special considerations for intellectual property rights?

Ethical & Social Implications
• The ethics and code of conduct for Open Source developers
• The social ramifications of an Open Source work force
• What impact will Open Source software have on the IT divide?

The meeting dug into the significant issues in all four areas, with collaboration models dominating the discussion, even though contentious issues hit every panel. The focus of each panel was the quantifiable benefits and the steps to risk mitigation by relying on Open Source, as well as perspectives on the enormous social and ethical implications of the Open Source movement.

Excerpts from:
Keynote: Open Source as a Tool of Boundaryless Information Flow
Allen Brown, President and CEO, The Open Group

[Allen began by establishing a context for the event within The Open Group's vision and program.]

What CIOs tell us is that they are under a significant amount of pressure. And that pressure is coming from the changes within their organization. The pressure is to be able to deliver information when and where it's needed in a timely and reliable manner. Why is the pressure on them? The problem is that organizations are changing and they need to be able to reliably deliver integrated information when and where it's needed. That has required changes in when, where and how information goes from one person to another. So their key issue is integrated information and access to it—they've got to be able to provide that to people.

We took this finding to our Customer Council. The Open Group is a consortium–a partnership between vendors and buyers—and the Customer Council reflects the thinking of members who are buyers. These members worked on something called the "Interoperable Enterprise", which is a Business Scenario [The methodology we use for describing a problem in a business context] available on the web free of charge. That Business Scenario describes the pain that large customers have with delivering integrated information. Let me describe the issues it covers.

Enterprises were originally established in an end-to-end process. They buy raw materials, make them into something, and they sell them. For many years, we organized people into departments in a particular field, and within them, started to get situations where people would become experts.

There were two great benefits to doing it this way. Departmental experts could do things faster because they did things more repetitively, and they could improve quality because they built best practices for their particular area.

But what resulted is what we all know today as stovepipes or silos. So if you look around, you find that within an organization we developed a lot of stovepiped departments. We'd even go so far as to call some parts of our organization "divisions." Over the last ten years or so, most of us have been trying to break down those stovepipes. Whether we tried business process re-engineering or other approaches, the person who really pushed this home was Jack Welch at GE.

Do you know the story of what Jack Welch did at GE? It's called the Boundaryless Organization. What Jack was concerned about was the horizontal, vertical, and geographic barriers within organizations that prevented the organization from working. In today's environment, where we have to react much more quickly to any situation, we don't want things going in a departmental hands-off process. We want to get people together to attack problems quickly and efficiently. And that's what we've been doing

with cross-functional teams that come together specifically to solve a particular problem or set of problems.

When we started doing this, the big problem was the culture between the people in the different organizational stovepipes. They didn't talk to each other. Hopefully, we've overcome that now in most of our organizations.

Having overcome the barrier between people, we've found that within those stovepipes or silos the IT systems were specifically built for the silos. They were all conceived individually and weren't intended to work with others. But we're not just going to throw away systems that have been built up over perhaps 20 or even 40 years. The challenge gets even more complex when we bring business partners into the picture.

To get a sense of the scope of this hurdle, we asked one of our customers two questions: "How many business partners do you have?" and "How many applications do you have?" They replied "Over a thousand," and "We don't know."

Imagine trying to find information, putting it together, and then delivering it where it's needed to cross-functional teams that are continuously forming and re-forming. You can't just put in a new application for each team, because by the time you study their specific need and respond to it, the team has gone away and others have replaced it.

As Jack Welch called the vision for the whole enterprise the Boundaryless Organization, we focused on a vision of Boundaryless Information Flow—getting information to flow in a boundaryless way within the organization. And the added complication for these organizations is that they're global and have to get interoperability working at a global level.

If we take a look at The Open Group's vision statement, we see something that says, "Boundaryless Information Flow achieved through global interoperability"—but that's not enough. Jack Welch himself said that boundarylessness does not mean having no boundaries. But what we must have are effective boundaries that are appropriate to the business need. What we don't need are boundaries that disable business. We need boundaries to be permeable so they *en*able business.

Just as Jack Welch could not go out and buy a Boundaryless Organization, neither can The Open Group make a Boundaryless Information Flow package that you'll go out and buy. It's a continuous process. You have to work through all the variables, just as our different Forums are doing now.

What we do is bring customers and suppliers together to understand what the issues are, to understand what the pain is and what the requirements are. We aim to understand where we need standards, where we need tailored or other solutions and to enable the industry to deliver the standards and solutions. It's important to make sure that we know what we're getting.

One of the big issues with standards is that customers don't necessarily see the benefit. They hear from a vendor, "My product complies with standards. Trust me—I'm a salesman." And they know that doesn't tell the whole story. The Open Group does certification of conformance to standards. It's only by certification of conformance that customers know that the products will work according to a standard.

That takes us to some of the things that The Open Group does. Business scenarios (I've already mentioned the Interoperable Enterprise), Architecture Framework, Challenges, Specifications, Certification, Best Practices, Open Source. The reason we have to deal with all of these things is that in order to help industry get to Boundaryless Information Flow, we can't just have one tool in the toolbox. We can't just go round with a hammer thinking that every problem is a nail. We've got to have the appropriate tool for the job.

There are a couple of Business Scenarios that our members have done in addition to the "Interoperable Enterprise", we have Identity Management, and the "Executive on the Move" on the web site. They are freely available.

With "Challenges", members come together and say, "We've got a specific problem with existing products that we need to get fixed now. Are there ways of configuring products to do that?" The latest example was concerned with the need for security of messages using e-mail clients within and between organizations. This resulted in the Secure Messaging Toolkit. The Mobile Directory Challenge is next.

Open Source is another tool. And Open Source is not just about the platform. An example of how we use this tool is OpenPegasus.

Over the years, we have had a real problem with management systems. Management systems did not interoperate and we had working group after working group of vendors sit down together to try to figure out how their products could interoperate. They never arrived at a solution. Every couple of years they'd come up with a plan and say, "We've come up with a great idea on how this is going to interoperate." And after the initial enthusiasm died down, they'd realize that it was one particular vendor's solution and it would cost a fortune to re-engineer. What happened with OpenPegasus is that the vendors came together and agreed upon a Common Information Model (CIM) that needed an implementation for which we had one sources. This gives us a translation layer—a layer that will enable us to communicate from different management systems. So what we've achieved with Open Source in this case is to overcome an intransigent problem that specifications alone couldn't achieve. We couldn't reach consensus any other way.

In the future, as this is going back into product, we want to make sure that it goes back into product in a consistent way so we do need a consistent standard or specification. And then at some stage customers are going to want to know that the products they're buying are conformant with that specification. So then we would want to see a certification program.

Turning to specifications and standards, let me offer a couple of examples of implementations that The Open Group has been developing. You may have seen s press release from Seibel talking about ARM, Application Response Management, going into their products right now. Our Enterprise Management Forum worked on ARM. We also have a key role in the Single UNIX® Specification. Some of the questions in this area include: Is a specification a standard? Who sets standards? Are standards only done by formal standards organizations or do consortia do them? Do consortia do recommendations, do they do certification, what do they do? These are related issues we deal with constantly. Our position is that mostly what we do are specifications and the formal standards bodies do standards. So if you look at the Single UNIX Specification, although that is regarded as *the* standard in the industry, in actual fact, it is a profile and a whole list of specifications.

Does Open Source equal open standards? Open Source can only be standard as a methodology. Linux, for example, is not a standard until people agree on a standard. In this case, the Free Standards Group developed the Linux Standard Base to try to make sure that a standard comes together for Linux.

The next tool we can look at is certification and testing. This is a big part of The Open Group life. Many people know, or are getting to know recently because of certain events, that we own the UNIX® trademark and that we certify server products and thereby enable them to use the UNIX name. People are not specifically concerned about the servers, they are concerned that if they're using UNIX, especially in a procurement situation, that the products conform to the Single UNIX Specification and have been properly certified as such.

We also stand behind the Linux Standard Base certification. One of the things that happened there was that we donated about 95 percent of the test suites to that activity so that Linux Standard Base certification could happen. Additionally, we are involved in CORBA; Wireless Application Protocol; LDAP, which is an IETF specification; Schools Interoperability Forum, which is a completely different vertical activity; and Digital Video Broadcasting Multimedia Home Platform, another area where we're doing testing. One more tool in the tool chest.

The final one is best practice, where our members come together and develop things like the Manager's Guide to Information Security. It's truly a manager's guide, not something on a technical level. It's another tool. Our members are now working on a Manager's Guide to Open Source.

Open Source and standards are among the tools that we will use in order to get to Boundaryless Information Flow.

Rules of the Conference
- Panelists limited to 10 minutes up front
- No overt bashing or flaming
- Interactive discussion of at least equal length after the presentations

The Business Panel
Moderator: Graham Bird, Vice President of Marketing, The Open Group
Panelists:
Andrew Aitkin, Olliance Group
Loren Sinning, Cargill, Inc.
Carolyn Kahn, The MITRE Corporation
Stormy Peters, Hewlett-Packard

Graham announced The Open Group's Open Source Project, chaired by Walter Stahlecker of the Hewlett-Packard Industry Standards Program Office. Founding members of the Project were the impetus behind this Open Source event. The Open Group has about 200-300 organizational members of varying sizes and 2,000-3,000 regular participants in conferences, working groups, and related activities. This conference is designed both to energize and to educate that membership about Open Source, as well as contribute to the activities of the Open Source community.

Graham posed questions that set the stage for the Business panelists:
- How do you persuade business colleagues to give Open Source a serious look?
- How do you generate confidence in them to try Open Source solutions?
- How do you confidently bet your job on Open Source?
- Should businesses care about standards? Should they feel compelled to influence the requirements expressed in standards?

Andrew Aitkin, Managing Partner and Founder of the Olliance Group, began with his view of the commercial ecosystem that surrounds Open Source. In surveying the audience, he found that one-third of the attendees represented technology vendors. The balance represented users with an even split between active contributors to the community of Open Source and people who are new to Open Source.

The growing popularity of Open Source is having a profound effect on many technology vendors. The issue that they're going to face is that the adoption of Linux on the desktop is coming much faster than they realized.

The issue with application vendors—and this is the core to adoption—is that many large vendors understand Linux and are beginning to understand Open Source. But their smaller partners, such as vendors serving vertical markets, do not understand the space. They don't have a sense of what it will cost them to enable a product to run on Linux, to invest in sales and marketing to reflect a new strategy, how much they will have to invest in support and training, and so on. The other component of the ecosystem that has a challenge is the resellers and integrators, who are in a spot similar to the partners.

The issue for end-users therefore is, where do you go for support? Certain major vendors provide it, but it is not yet universally available. Robust Open Source solutions currently available are Apache, JBoss, Sendmail, OpenOffice, Linux, Zope, Samba, and MySQL; behind each one is a company providing skilled support services.

Andrew concluded his presentation with an overview of the process of developing and deploying a solution, with an emphasis on the most important ones if the solution is Open Source, including identifying gaps in architecture, and estimating total cost of ownership.

Loren Sinning, Senior IT Advisor for Cargill, Inc. brought the perspective of a large user, a company known for its skills in managing risk. The company will look at the state of the market along with the risk of supporting global applications on Open Source before any large rollout. That means that the company is typically not at the leading edge when it comes to technology. So is Open Source acceptable to Cargill? The Open Source people at the company told Loren, "Absolutely, yes!" Business management people offer a less enthusiastic reaction.

From Cargill's perspective, there are six big issues that must be resolved before the company goes much further with Open Source. At the top, Loren put education to ensure that management understands the benefits of Open Source. The other five issues are mind share in the market—to Cargill management that means that more approved vendors support things like Linux—version control, the fact that there are so many players in the space of varying degrees of stability, licensing, and legal concerns.

Stormy Peters, of Hewlett-Packard's Open Source Program Office made the case for Open Source acceptability in business. HP uses Open Source throughout the company— in IT, R&D, and other places internally—and ships Open Source solutions externally.

The proliferation of Open Source use within the company provoked HP to create an Open Source Program Office, which took shape with three major parts:
- Strategy and Policy: Why is the company going to use and ship Open Source? If employees decide to use Open Source, what are the considerations?
- An Open Source Review Board to review every instance of Open Source software that HP ships—a huge task, given that two to fifteen new projects surface every week that use Open Source software or involve shipping it as part of an HP package.
- External presence.

In addressing "is Open Source acceptable in business," Stormy answered firmly that it is, and cited the billions of dollars generated each year by Open Source products.

Given that Open Source is here to stay, the issue becomes how to make it work effectively. To know "what are you really buying?" means being savvy in at least six areas: Copying, support, media/manuals, licenses, bundles, and indemnification.

Carolyn A. Kahn of The MITRE Corporation is focused on the business case of Open Source software. MITRE received a Leadership Award from the Potomac Forum for investigating the technology and economics of Open Source software in its project "Open Source Software in Military Systems;" available on both the MITRE and The Open Group web sites. The primary conclusion was that, in many instances, Open Source is acceptable as a long-term, viable solution, but there are risks that must be mitigated.

Specific determinants in choosing Open Source software over COTS software are project-based. Open Source tends to be a good option for products relevant and interesting to a large community with many developers working on it. Open Source often compares favorably for server and embedded systems that may require customization. Open Source can provide a lot of advantages for long-lived embedded systems because of its life cycle licensing and support savings. But Open Source software generally doesn't fare better than COTS for typical desktop applications.

Carolyn advised that the economic benefits and costs of Open Source usage and maintenance must be evaluated over the full life cycle, and she recommended ways of doing so. It involves a system of weighted variables in which twelve attributes are ranked from "very strong" to "very weak"; the list includes such items as ability to customize, interoperability, and availability of applications.

In looking at "Buy *versus* Build," a couple of key points surfaced beginning with the assertion that pure COTS can be analogous to an unmodified Open Source scenario. In both cases, it's important to assess the reliability and functionality of a product, licensing restrictions, and so on. On the build side, consider the costs of acquisition and support.

Interaction with the OS community versus vendors

Q. How is engaging with the OS community different from engaging with a vendor?

Andrew said there are two aspects of the Open Source community. It is an amalgam of developers from across the globe, but it is also commercial enterprises that support Open Source applications. Deal with them in slightly different ways. With the community, after a company decides which application it wants to deploy, it should build a relationship with the developers. Don't just use output from the Open Source community; contribute something to it as well. The advantage of working with the community will surface in the form of additional functionality for the application, for example. But that will not happen without reciprocity. That could take the form of contributing code or bug fixes.

Bruce Perens urged caution to the large enterprises about interacting with the Open Source developers so that management doesn't panic because they fear contamination of company IP. A company engaged in these activities should have an Open Source policy.

Hank Jones suggested that it is good to advocate changes in Human Resources processes in performance evaluation. Developers, product managers, technical support people, or others who are expanding the company' capabilities through their work in Open Source should have that acknowledged in their formal reviews.

ROI

Q. Are there any definitive studies that identify solid ways to demonstrate ROI?

Carolyn noted that there are many studies available, and many of them advocate different points of view. She concluded they are not reliable in, or applicable to, every setting.

Andrew Aitkin suggested taking different pieces of the studies and building one's own model.

Loren Sinning added that a company must look at its business requirements first—what is the perceived business value of doing going with Open Source?

Glass Ceiling

Q. Many Open Source developers have no interest in developing the applications that customers want to deploy. Won't this mean that Open Source will hit a glass ceiling?

John Terpstra, founder of the Samba team, noted that his Samba initiative reflects a desire to capture a significant slice of the Windows networking market.

Bruce Perens reminded everyone that, a few years ago, the limit was set at the GUI. Now it is set at enterprise applications. In truth, where that ceiling is set is an unknown.

Greg Wettstein, systems architect for North Dakota University and an Open Source pioneer, countered that the glass ceiling is valid. In his opinion, the economic model that underlies Open Source will drive change. Companies must support the companies that are trying to create the enterprise applications. If organizations simply take Open Source software and provide no form of remuneration for the people who invest their IP in it, there will be the glass ceiling. And companies will not have access to the level of high quality software that they can reliably bet their organizations on.

Andras Szakal of IBM reinforced that thought by noting that large companies invest heavily in testing, quality assurances and support for Open Source products because their enterprise customers demand it. That is the only way to make Open Source acceptable to business customers.

Graham Bird concluded the glass ceiling discussion with the assertion, "If Open Source is going to succeed, it has got to come with the mindset of the customer, and in many instances that doesn't happen."

The Technical Panel
Moderator: Terry Blevins, Vice President and CIO, The Open Group
Panelists:
Bruce Perens, Perens LLC
Dr. John Collins, Department of Computer Science, University of Minnesota
John Terpstra, Samba
John Schmidt, Best Buy
Eduardo Gutentag, Sun Microsystems
Andras Szakal, Federal Software Group, IBM

Terry Blevins posed the primary questions of the session:
- Is Open Source robust, scaleable, portable, and interoperable enough to support an enterprise?
- Is Open Source usable for SMEs?
- What Open Source technologies are coming, such as infrastructure and applications?

Bruce Perens, Open Source consultant and pioneer, tackled the first question with a question: Is robustness always a goal of software? Clearly addressing his next question to the vendors in the audience, he asked if they really want their software to always be robust, easy to use, and trouble-free—which would negate the need for support calls. He used this idea as a way of introducing a key reason why an enterprise would turn to Open Source—an entire community is available to improve the robustness of a product.

On the issue of scalability, he saw no real problems. Regarding portability, Open Source scores highest; the operating system runs everywhere and so do its applications.

As Bruce sees it, Open Source shares a lot of goals with SMEs. To start, the biggest challenge they face is competing and surviving in a field of huge, multi-nationals; Open Source has a lot of the same issues. Open Source has an SME-oriented, user oriented mindset. The big thing that SMEs do need is better commercial support.

The next thing coming down the road is Open Source on the desktop. Open Source products such as OpenOffice and Mozilla perform the entire range of functions required by most clerical employees.

And what should SMEs do to minimize risk? Bruce returned to one of the major pieces of advice that emerged from the business panel: Have an Open Source policy in place, particularly if the company has IP concerns. He also cautioned them to understand the terms of support. Red Hat, for example, has support contracts that depart from the norm in the Open Source world; an SME needs to pay attention on a case-by-case basis.

In no uncertain terms, Bruce noted that Open Source has a central role in achieving Boundaryless Information Flow, as described by Allen Brown in his keynote. He referred to the lock-down of systems with increased digital rights management and deployment of trusted systems, and expressed confidence that Open Source provides the option for releasing the flow of information appropriately.

John Collins, University of Minnesota professor, concurred with Bruce that the answer to the first question (robustness, scalability, etc.) is "yes" on all counts. On the second question of Open Source's usability for SMEs, he disagreed with Bruce. Open Source infrastructure software is interoperable at the infrastructure level, but Open Source desktop software is not as interoperable as needed between desktop applications.

Moving to areas of success as well as challenge in enterprise adoption of Open Source, John said that one of the reasons that government agencies are starting to adopt it is

because of the document formats. He sees an opportunity to develop document formats that are common and well documented and have implemented applications around them to drive this process forward.

John Terpstra of the Samba Team, addressed whether or not Open Source software is robust by citing Linux and xBSD as examples of mature and robust Open Source offerings. This came with a footnote. Open Source has successfully challenged Microsoft's business model; as a result, Microsoft has made strategic initiatives with Windows Server 2003, which he termed a great improvement over the previous offering. He expects it to challenge perceptions of Open Source in some areas.

In the areas of applications, interoperability, and portability, John assigned a "good enough" to each category.

Open Source seems to be making inroads in enterprise use. According to a June 15, 2003 *SD Times* article, between 36 and 38 percent of all corporate sites run Linux. John attributed this to its speed, ease of installation, maturity, and the fact that it works well. The two-fold problem, on the other hand, is configuration and manageability. Setting up a DNS or DHCP is difficult to do. This problem is the Achilles heel of Open Source.

John contended that the key obstacle for Open Source is the business model. The Open Source community needs to determine where the money is and get it coming in to allow development of products that will make it more successful. He placed importance on the development of tools to provide end-users with more freedom in what they will use.

John Schmidt, IS Leader for Best Buy, stepped up next to address the same set of questions from the perspective of a retail organization of 550 stores across the United States and 150 in Canada. He opened with a look at the integration spectrum at Best Buy and the metrics he presented focused attention on the magnitude of his IS challenge. Best Buy moves about 100 Gigabytes of data a day between systems, and there are 350 different systems (applications) within the company.

John categorized Best Buy as a user of Open Source and pointed to twelve different products in use, including Eclipse, Apache web server, Linux, and SendMail.

He then went straight to the standards discussion, asking "What's wrong with this picture?" in presenting a graphic depiction of how few end users participate in standards activities related to the retail sector. Those who provide solutions to the sector dominate the standardization process because users have abdicated their responsibility—not because they can't participate. He took a position on what he sees as the differences between traditional standards and Open Source. Primary contrasts were in the areas of driver, process, acceptance, deliverable, and motivation.

Eduardo Gutentag, XML Standardization Lead, Web Technologies and Standards, Sun acknowledged that Open Source offers many positives on an IT balance sheet, but he chose to focus on the obstacles to acceptance. Key among them are developers' lack of

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experience with enterprise, lack of testing facilities for interoperability and testing, and perceptions that testing is boring and bug fixing isn't creative.

Regarding the usability of Open Source for SMEs, he maintained that one should always make the assumption that SMEs don't have a lot of resources for IT. They need reasonably priced support and reasonably readable documentation.

He looked down the road at opportunities for Open Source and saw that almost every functionality may be open sourced very soon; the real money to be made is in support. He also cautioned that there is too much flawed product in the marketplace. One way to address the quality—or at least the consistency—problem is through open standards. He called on The Open Group to start an education program about standards.

Andras Szakal, Chief Architect of the Federal Software Group for IBM, noted that he would not only talk about why Open Source is important to IBM, but also how IBM positions Open Source software as part of its offerings.

He reminded everyone of IBM's early, traumatic encounter with desktop computing and blamed a lack of listening to customers as the cause of a revenue plunge that necessitated a corporate resurrection. As a company, they realized that products needed to be focused on open standards and, later, on Open Source when it grew in popularity.

IBM considers Open Source software important for three big reasons: Customers want it, Open Source software is a good approach to developing open standards, and it can be a source of industry innovation.

IBM's goals for Open Source begin with the drive toward rapid adoption of open standards. They want to cooperate on standards development and compete on the implementation of standards. IBM also wants to use Open Source software as a business tool to block competitors from creating "lock-in" and proprietary control points. Finally, the company wants to extend IBM mindshare, to create a preference for IBM by linking to popular Open Source products and projects.

In his look at the road ahead, Andras called attention solely to the projects of greatest importance to IBM, namely, Linux, Eclipse, Apache, and Grid Computing. He asserted that Grid Computing will change the whole IT infrastructure and is an open standards, Open Source initiative from the ground up.

In positioning Open Source software within IBM's strategy, Andras offered eleven areas of consideration, beginning with product support. Other areas: platform support, long-term viability, scalability, reliability, integrated tooling, support for open and government standards, dependence on individuals, security, perceived TCO, and partnership.

UNIX versus Linux

Q. From a technical perspective, what was wrong with UNIX that Linux emerged?

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Bruce Perens stated that there was nothing wrong with UNIX from a technical perspective. Andras Szakal countered that UNIX was often slow. Bruce Perens came back with an assessment of what went awry for UNIX. There would have been a lower cost, and higher performance and quality if there were good competition.

Participation in Open Standards development

Q. How can we standardize Open Source?

Multiple responses supported the notion that anyone, even individuals, could participate with little or no hard costs in the open standards process. From certain standards (or specification) development groups that allow online participation to actual meeting attendance with voting rights, the opportunities run the gamut.

Amy Marasco, ANSI General Counsel, highlighted the different points of view that define "open." There are the process, legal, and technical points of view. The process issue involves the ability of all stakeholders to participate. Someone with legal issues at the forefront might define "open" in terms of IP, considering a standard open if it is royalty-free and unencumbered by IPR claims. Technically, an open standard allows for unrestrained exchange of technical information in developing a standard.

The Social and Ethical Panel
Moderator: Dr. Bill Estrem, Professor, College of Business, University of St. Thomas
Panelists:
Dr. Ken Goodpaster, University of St. Thomas
Dr. Peter Vaill, University of St. Thomas
Malcolm Reid, Medtronic
Tony Stanco, The Center for Open Source & Government, and Cyber Security Policy and Research Institute, The George Washington University

Bill Estrem, a member of The Open Group's Governing Board, prepared the audience to "plow new ground" by exploring the social and ethical dimensions of Open Source and open standards.

Further differentiating this panel from the others, Bill described his group as facilitators of discussion about the overarching topic, rather than experts about specifics of Open Source. He posed the primary questions about open standards:
- Who benefits from standards?
- What motivates participation in standards efforts?
- What is the value of social capital in the current economic milieu?
- How do we deal with the dual tragedies of
  - Tragedy of the Commons
  - Tragedy of the Anticommons?

Explaining the latter, Bill harkened back to village controversies over access to common property, or "the commons." If there were no fences, then the animals could graze there

alongside the people who were enjoying the commons, and that would ultimately destroy it. Fences preserved the commons, but kept out a lot of people. The current conflict over royalty-free versus RAND, he felt, are analogous; that is, whether open standards should be unencumbered by IPR that embed cost in the use of the standards, or whether Reasonable And Non-Discriminatory use agreements may be acceptable.

Bill moved to topics for the open source discussion, first considering the human organization aspect of open source. "When we look at the human organization, we see something that is far more difficult to manage than the diverse technical elements." He posited that doing technology development and innovation in a hierarchical environment is hard enough, but coordinating such an effort in a virtual community with people of disparate cultures who don't know each other is a daunting challenge. And how can companies of different sizes that want to enter that community and contribute something go about it effectively?

Before turning the floor over to the panel, Bill asked an important question: "How applicable is what we are doing with Open Source to other activities?"

Dr. Ken Goodpaster is a moral philosopher on the faculty of University of St. Thomas, and formerly a faculty member at Harvard's Business School. Moral philosophers and ethics experts rely on the "moral point of view" and Golden Rule in discussing issues, and Ken suggested that they might be applicable in this technical arena of an Open Source conference.

He cautioned that ethics should not be confused with altruism. Ethics is not about altruism; it is about the pursuit of self-interest. Ken also said that ethics is about being partial, and then breaking open that partiality and generalizing it to others. In chiding him for some selfish behavior, a friend of Ken's once told him, "You're special, but you're no damn different!" That optimizes the essence of ethics and the moral point of view. How is it possible to live one's life with the awareness that one is special and unique, and that one is no different at the same time? He said it's not just a personal problem, but also an organizational one.

He focused on the clusters of theories of "logics"—the four forms of sorting out relationships in terms of moral reasoning:
- Interest-based – This is a cost-benefit analysis centered on determining the greatest good for the greatest number of people.
- Rights-based – The rights-based thinker has claims anchored in nature, not convention. Rights-based thinking gave the United States the Bill of Rights.
- Duty-based – The duty-based thinker criticizes the first two for being too focused on the micro-relationships between people. This kind of ethicist emphasizes subordinating personal interests and rights to something larger.
- Virtue-based – A virtue-based thinker accuses the others of making ethics too complicated. The emphasis is on habits or character traits that guide choices.

Ken suggested looking at the moral credentials of the two paradigms of "Open Source" and "proprietary." He proffered that the differences might be summarized as follows:

Applied to persons, organizations and social systems	*Open Source*	*Proprietary*
Interest-based	Common good	Private interests and public interests
Rights-based	Acknowledgement rights	Property rights
Duty-based	Obligations to share and to cite	Fiduciary and stakeholder obligations
Virtue-based	Generosity, honesty, collaboration	Accountability, fairness; prudence

In introducing **Dr. Peter Vaill, also on the St. Thomas faculty**, Bill Estrem acknowledged his expertise in organizational behavior. With his orientation, Peter said that he looks at how a project stands and falls on people behaving effectively toward each other. The behavioral scientist asks, "Why or how did this happen?" or "What will happen next?" In contrast, the ethicist asks, "Should this be happening?"

Peter opened with a "thought experiment," posing this question to the audience: What functions and capabilities of an operating system are taken for granted today which were virtually unimaginable 15-20 years ago? Taking this to the next logical question, he suggested that 15-20 years from now, people would look back on today and be able to come up with a plethora of things they once found unimaginable. The question then becomes, how should the industry behave to make possible the emergence of ideals such as the range of "ilities"—interoperability, reliability, scalability, etc.—so progress does not stall.

His next thought experiment centered on the question: What value systems seem to be in collision regarding the question of Open Source versus Proprietary source code? For him the question sparked a dual response.

Paradoxically, there may be relatively few short-term commercial arguments for Open Source. It is natural that an organization would want to protect innovations of its own making: the potential financial leverage of such innovations very high. The need to recover development costs is continual and intense. There is continuing fear that someone else will create some code that leapfrogs everybody, and it seems foolish to trust that if someone else does create such code, they will readily share it with everyone.

The problem is that what may make sense for the industry may not make sense for individual organizations. Individual organizations experience an imperative to pursue their direct, immediate interests. Organizations develop tacit theories of their survival requirements to justify what appears from the outside to be greed and selfishness.

Next was a strike at the six-sigma mentality. Six sigma impedes innovation by creating performance anxiety, he asserted. Today's students live in a world where they either perform or they will be fired. The twisted result is a dumbing down of performance. It is a predictable result: Put enough pressure on a human being and it will do what is required, but only what is required. There will be little or no taking chances, of going outside the box. All thought is on the next deliverable, and therefore the immediate project and how it must be produced with zero defects.

Peter next asserted that technical excellence would not carry the day. Directing his remarks to the technical people in the audience, he said that everything they know technically depends for its effectiveness on the meaning that someone else attaches to it. That means they are in the interpersonal world of talking with people, persuading people, sitting around the table in groups and teams—all of the kinds of behavioral things in which technical excellence is expressed. But if they only have the technical excellence, and take a haphazard approach with the interpersonal elements, there is a good chance they will run into difficulties.

Finally, with a nod to John Terpstra's earlier argument that the big problem in Open Source is the business model, Peter offered additional support in his presentation on the "balanced scorecard." It is a four-dimensional model of effectiveness of an organization, not just one-dimensional, that is, profit based. In addition to evaluating profit, it also involves the efficiency of work systems, effectiveness with which the company reaches its markets and treats it customers, and the degree to which it is effective with its people.

Next up was **Malcolm Reid, the Director of Technology Architecture for Medtronic**. Malcolm's current dual sets of responsibilities position him uniquely within the neurological and diabetes business sector of his company; it is a joint assignment in business information systems and product development. They are different worlds with common questions. First, quality issues come to the forefront; all products must be safe and efficacious. In fact, striving for "the highest possible quality" is part of the company's mission statement, hence, it's value system. It is also a legal and ethical requirement considering that the end-users depend on Medtronic equipment to save their lives. The processes in place for software validation, procurement, engineering, and so on, must withstand intense scrutiny.

Malcolm's sector is now considering an Open Source real-time operating system as a potential platform for a new generation of products. Technical and legal questions immediately come to mind. Can the software be as reliable as the company will require? If Medtronic decides to use an Open Source system as the firmware in their devices, how do they know they have clear title to it? Is there some way the liability can be removed?

Referring back to Ken Goodpaster's presentation of the four logics, Malcolm wondered if, as an Open Source consumer, Medtronic would have a moral duty to participate in the Open Source community. In other words, he wondered, if non-participation was simply a cause for nagging guilt, or an abdication of responsibility.

With his final question he inherently challenged an assumption that the collaboration associated with Open Source is all done for the side of good. He asked, can it be done in ways that are socially harmful?

Tony Stanco is a founding director of both The Center for Open Source & Government, and Cyber Security Policy and Research Institute at George Washington University. Open Source is gaining respect as a technical model for developing software. From both a social and industrial point of view, Open Source is precedent setting because no corporate or governmental structures are instigating the activities. They jumped into the game after the momentum began.

To varying degrees, governments are getting serious about Open Source. The government has some particular obligations to its constituencies; software for government use is special.

Software in a digital society is more than who can do it more efficiently, or who can make the most money. Capitalist interests are not necessarily ethical in this environment. No single group should have control over software—there are potentially devastating social consequences.

Dichotomy of ethics

Andras Szakal noted that, on the one hand, people tout the necessity for a level playing field, but on the other, some don't want to play in the same game.

In writing the first draft of the open source definition, Bruce Perens said he was exposed to a moral and ethical situation that affected his thinking about licenses. His neighbors attached a caveat on a circuit simulation program called Berkeley Spice. The program was never to be used by South Africa, which at the time, had an apartheid regime. The terms of the license went on after the apartheid regime fell, and a Black government assumed power. The attempt to be moral backfired. Bruce concluded that he never wanted to be part of software that was flavored by ethics, morality, politics, or religion.

Amy Marasco added that, if people look at all the things that in this society that are good, they inherently conflict.

The Legal Panel
Moderator, Steve Nunn, Vice President and COO of The Open Group
Panelists:
Lawrence E. (Larry) Rosen, Rosenlaw.com
Henry W. (Hank) Jones, III, Intersect Technology Consulting and Law Office of Henry W. Jones, III
Tony Stanco, The Center for Open Source & eGovernment, and Cyber Security Policy and Research Institute, The George Washington University
Amy Marasco, American National Standards Institute (ANSI)

Steve noted that the complexity of Open Source from a lawyer's point of view centers on the many licenses associated with it. As of the week of June 16, he noted that there were 43 approved Open Source licenses, and the number is rising. This fact set the stage for the primary questions to be explored by panelists:

- In legal terms, what does, and what does not, fall into the category of Open Source software?
- What kind of legal roadmaps are out there (e.g., court cases, arbitrations)?
- Who decides whether an Open Source product has been handled properly? As a corollary, how do Open Source advocates know that someone is breaking the rules?
- Are there any key cases that have helped define Open Source?
- Which Open Source software license ambiguities will trigger OSS license interpretation litigation and arbitrations?

Larry Rosen of Rosenlaw.com, who is a recognized expert in Open Source licenses and has recently authored two new licenses, argued that there aren't, in fact, enough licenses. His rationale for that statement is that the existing licenses aren't good enough yet—not well written, not clear, not precise.

From the consumer's point of view the bottom line on Open Source licenses is: They guarantee anyone, anywhere, for any purpose whatsoever, the right to use the software, copy it, modify it, and distribute those modifications free, or for a fee and the right to have the source code that makes those things possible. Larry's said consumers have nothing to worry about when it comes to licenses. It is only those who intend to distribute software who have to exercise due diligence regarding the terms of the license.

Referring back to the discussion of rights-based logic, Larry reminded everyone of the uniqueness of mentioning the Bill of Rights in an Open Source conference. He emphasized that the critical point for Open Source is the desire to have the freedoms associated with that software; licenses are supposed to protect those freedoms legally.

He concluded by saying that RAND can't be sharply defined. "Reasonable" is a subjective description He also challenged how clearly people understand and handle the concept of "non-discriminatory." But he did admit that people with IP protected by patent or copyright had a right to make money from it. The questions are, in the face of a paradigmatic shift prompted by Open Source, "how much money should be made" and "by charging whom." Standards organizations must change in light of the shift.

Hank Jones, both a business consultant and an attorney, described standards as a form of gamesmanship. He considers it an open secret that many companies use standards as both a defensive and an offensive weapon. Companies have been known to file patents before, during, and after standards-setting meetings.

In comparing software to real estate, he emphasized how important it is to know what's owned. With real estate, the protection is a thorough title search to determine if there are easements with pipes or sewers, for example. People should invest the same kind of

wisdom and skills in getting to know the property they call software. It is incumbent on the buyer to figure out what the opportunities and obligations are.

The key legal issues, then, come down to the following:
- As a design principal, it's a matter of WYSIWYG versus WYDSIWGY (what you don't see is what gets you); this is the fear of every IP manager
- Sound construction and engineering is a long-term project and design philosophy.
- Plan now for future constituents and unexpected standards-setters in software management; it isn't just computer scientists and lawyers who get to "vote."
- Silos are sickly; multi-disciplinary processes and teams are key to Open Source software.

He recommended that people in the audience commit to being educators in their arenas. Explain what the noise about Open Source is to colleagues. He concluded by mentioning a few tools that will make the journey easier, including metrics of litigation costs and overhauled licensing practices.

Tony Stanco dug into policy issues behind the legal issues. "The policy issues are what drive things. It tells us the reasons why these things are being done."

Tony said it's not useful to look backwards for guidance on Open Source because it's so different from approaches that preceded it. Despite that oddness, major IT vendors now have Open Source strategies and Open Source software is gaining market share, so Open Source must be fulfilling some basic economic need. Tony noted that Wall Street actually "punishes" IT vendors that don't have an Open Source strategy.

For all the wealth that the proprietary software industry has created, it has also created problems, such as monopolies and interoperability problems. The problem might be the proper balance doesn't exist between the rights of the producers and the rights of the users. It is a system problem that must be addressed regardless of whether the approach is proprietary or Open Source.

Turning to the part of the system that addresses IPR, Tony noted that, because relationships are not based on status but rather on contract, if someone has rights, that person may give them up. One may not, however, get more rights than are allowed by the contract. He says that it is arguable therefore, that Open Source is just a reaction to IP laws that favor software producers too excessively for a correct economic solution; the market is seeking a better solution. In short, 95 years may be an appropriate length of time to protect a book, but that doesn't apply to software. A GPL license, which essentially moves the timeline closer to zero, is the other extreme.

Amy Maracso, general counsel for ANSI, shed some light on the world of IP from the perspective of the *de jure*, or formal, standards setting world. ANSI's open standards process has weathered decades of scrutiny and use, so Amy suggested that when many people refer to open standards, they really mean products of the ANSI process, or

something close to it. Fundamental elements are that anyone can comment on developing standards and all stakeholder groups must be represented.

Amy then referred to her previous remarks in which she differentiated between open process, as just described, open IPR policy, and openness from a technical point of view.

Amy focused on ANSI's patent policy, which is similar to that at ISO/IEC and the ITU. As a matter of course, patent holders of technology considered essential for implementation of a standard must provide a patent statement telling the community the terms under which they may use it. Some ANSI-accredited groups won't accept IP in the standard; others will accept it as long as it's provided with no compensation required.

Amy looked to the sense of RAND. The ANSI policy is that it has to be either royalty-free or RAND. The rationale behind that policy is grounded in who is participating in standards development. They are technical people and standards development organizations that are very often non-profits. They are not the kind of people who are going to make determinations about the validity of patent claims and how much the technology is worth. The policy is set up to establish a "third-party beneficiary relationship," so that those wishing to implement the standard can say to the IP holder, "You've made a representation that you will license royalty-free or under reasonable and non-discriminatory terms." They then have an avenue to pursue that outside of the standards setting process. Otherwise, technical people who develop the standards might need to bring a legal team to their meetings

ANSI has always taken the position that one-size-fits-all rules are not appropriate. Just as there are different standards-setting procedures, there are different IPR policies and it really has to be what's best for that group.

Risk Management

Q. How do we mitigate our risk in using Open Source?

Hank Jones talked about the intimate exposure a customer can get to the code. He then challenged the perception that Open Source is more risky in terms of warranties and indemnification, noting that a lot of savvy vendors and customers have developed granular, specific questions and representation.

The point was made that customers want to have assurances in writing that the software will do exactly what the vendor's marketing people have told them it will do.

Bill Estrem wondered if there is a way to have Open Source projects rolling forward where part of the documentation can include specific traceability of any part that exists.

Larry Rosen reiterated Bruce Perens' point—made often—that Open Source projects are, in fact, open. He concluded, there are three ways to mitigate risk:
  1. Go to the wealthy company to buy software (i.e., they can handle a lawsuit)

2. Go to a company that does its business out in the open
3. Buy insurance

Chris Hertel of the Samba project wondered if he were personally vulnerable in any way by contributing code on a regular basis. He discovered he does run a legal risk; he is in the software business. Larry clarified that being in the software business has nothing to do with money. He is part of commerce and considered a sole proprietorship.

Bruce Perens jumped in with a key fact: He has formed a not-for-profit corporation called Software in the Public Interest to help address the problem.

Larry Rosen brought the discussion to a close by noting that it is true that individuals may be able to create their own Open Source projects and offer software, but they don't want to offer a warranty on it. On the other hand, legitimate, commercial Open Source projects do not just take software that's tossed over the transom by individual developers. They go through rigorous test procedures and fix problems when they are identified.

Digital Millennium Copyright Act (DMCA)

Q. To what degree is DMCA a problem for Open Source?

Larry Rosen quickly responded that it is a very big problem, and that the intent of DMCA is not consonant with that of the original Copyright Act.

Chris Hertel noted that one direct effect is that some Open Source people will not come to the US for conferences because of the ramifications of DMCA (i.e. fears of being accused of reverse engineering). Bruce Perens told the group that SPI provides *pro bono* legal services to developers in the Open Source community and that, in fact, Larry was one of the attorneys who provides them.

Open Source, Open Standards and IPR

Q. Is the formal standards world threatened by Open Source?

Amy Marasco responded that ANSI does not support just one system for producing standards—a one-size-fits-all—but rather matching the need to the process. ANSI is exploring ways to work with consortia and that Open Source is making its way into the formal system through JTC 1 and its project to address Linux standards.

Larry took a different angle by saying that they are scared and should be scared. The experience of W3C is an important one. He was referring to the W3C adoption of the RAND patent policy. The Open Source deluged W3C with e-mails of protest, saying that it was not acceptable to "proprietize" the web, which had been created in an Open Source way. He reiterated his assertion that the paradigm is changing.

Amy maintained that, just because the paradigm is changing, that does not mean that the formal standards community does, or should, feel threatened. ANSI has changed its patent policy in the past, and it could change it again in light of evolving paradigms.

Wrap-Up Session

Business Panel
Graham said, "We aren't as far down the track with Open Source" as many people in the group thought. He emphasized the interest in, and need for, probing the issues to gain a practical understanding of the productive ways to integrate Open Source into businesses. He also addressed the possible disconnect between the developer community and commercial interests. Graham pointed to the stated desire of many developers to make a contribution that "makes a difference," and not "just" write code. He suggested that making that difference involves listening to what the market says it needs. In that sense, strategic marketing has a role in bridging the gap between objectives in Open Source.

Technical Panel
Terry logged the number one issue as defining an open standard and identifying the process, or processes, to produce it—how to make sure that requirements make it into standards and making it clear who should participate in the process. He called for the creation of a standards business scenario.

Social and Ethnical Implications Panel
Bill flagged the question "Can we be innovative in a six sigma world" as a key one emerging from his panel. He felt that it was incumbent on industry to look at the impact on innovation of an obsession with perfection of process. He also noted that the issue of personal accountability was key in Open Source and that developers needed to explore that as it pertains to producing quality output.

Allen Brown added that different concepts related to the Open Source discussion, such as privacy, play out differently depending on the country and culture. Discussions of social and ethical implementations of Open Source, would therefore produce different output depending on the venue in which they occurred.

Legal Panel
Steve concluded that warranty and indemnification stimulated the most animated discussions and felt that both developers and commercial interests made eye-opening observations. He tied that in with the principal question in the business panel and suggested that effectively addressing the warranty/indemnification issue is central to making Open Source "ready for prime time" in the enterprise. He added that the number of Open Source licenses also embodied a mandate for the legal community—it is important to help users of Open Source understand where to start in terms of licenses. He felt that The Open Group might initiate an activity to record best practices in this area, and coordinate its efforts with the OSI.

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