THE STANDARDS EDGE:

Open Season

2005

EDITED BY SHERRIE BOLIN

Table of Contents

Preface and Acknowledgements

Sherrie Bolin

Editor in Chief, *The Standards Edge*™ Series
President and CEO
The Bolin Group

The Standards Edge: Open Season marks the third book in *The Standards Edge*™ series. This book was created to address some of the challenges facing open source with the hope of generating thought and discussion that will strengthen the movement as a whole. As with the other books in this series, this volume was produced in concert with a conference, which focused on open source and open standards. The conference brought together representatives from both of these communities, along with government and academic representatives. They explored strategies for strengthening open source and discussed how open standards and open source can work together. For a full analysis of the conference, please visit **www.thebolingroup.com**.

The Standards Edge series is designed to tackle the latest technological and standards issues and their impact on business. These volumes serve as a valuable resource to industry, academia, government organizations, standards setting organizations, and information and communications technology (ICT) customers worldwide. Future editions will cover additional topics in-depth that pertain to both ICT and standardization. Feedback, suggestions, and requests for additional copies can be sent directly to the creator and editor of this series by sending email to **sherrie@sbolin.com**.

The Standards Edge: Open Season was made possible through the assistance of many organizations and individuals. Special thanks goes to Sun Microsystems and its Chief Technology Officer and Executive Vice President, Greg Papadopoulos, for awarding a "no strings attached" research grant that provided the funding and the freedom to create an objective look at open source. I would also like to thank John H. Terpstra and the Open Standards Alliance for working unremittingly to make the conference a success and for providing introductions to an amazing array of open source and ICT leaders, some of whom contributed articles to this book. The authors in this book are knowledgeable experts in their fields, each adding a different viewpoint and perspective that should stimulate innovative thinking around open source and the ICT industry in general. To these authors, I give my utmost gratitude for taking the time out of their busy schedules to try to make a difference through their contributions.

To my team who has worked tirelessly to bring this book to fruition, I extend my sincerest gratitude. Laura Shelley has been invaluable in assisting with the copy editing, creating the index, and ensuring that we never miss a beat. Her enthusiasm and thoroughness are greatly appreciated. Laura Rinaldi designed the graphical layout of the book and used her expertise in this area to pull it all together. When she joined the team, we knew she was good. This book proves we were right in our estimation.

Finally, I would like to thank my friend and mentor for challenging each and every one of my assumptions, which probably has raised my blood pressure, but ultimately has challenged me to think differently. It is my hope that the authors in the book will do the same for you (except for the blood pressure part, of course).

Sherrie Bolin

Editor in Chief

Welcome to Open Season! Open source is grabbing the headlines and the attention of customers, large information and communications technology vendors (ICT), government organizations, and, of course, lawyers from around the world. It is positioned to change the software business as we know it, bringing new business models and processes for innovation to the market. It is also positioned as a target for large, proprietary corporations, those very organizations that must choose between attacking open source or embracing its model. The ultimate outcome will depend on the open source community's ability to build upon its strengths to overcome the challenges faced by any new business model as it grows. *The Standards Edge: Open Season* brings together authors from different areas of expertise and, indeed, different mindsets to look at both the promise and challenges facing open source today. By presenting varied views on the subject, the intent is to stimulate further innovative thinking and discussions on open source across organizational and geographical boundaries.

Open Season on Open Source

Open Season can be defined as a specific period of time in which it becomes legal to hunt something that is otherwise protected by the law. Based on the plethora of headlines around open source software lawsuits, it seems that open season may have begun on open source software (OSS). Some argue the merits of allowing these controlled periods of hunting because the meat can be used to feed the hungry (read "feed large corporations"). Others point to the cruelty of not at least providing the season's targets with weapons themselves (in this case, revised intellectual property laws). Finally, there are those who point out that open season actually culls the population enough to enable it to survive without suffering (elimination of threatening open source software efforts will

allow the others to thrive). Regardless of where you stand on this issue, it is time to put on your camouflage outfit, hide behind the blind, and get out those binoculars. We are going to take an in depth look at the open season on open source.

In the last few years, small businesses, large corporations, and even customers have faced legal challenges over their use of OSS. While patent infringement lawsuits are certainly becoming the norm when it comes to software development, suing customers, as in the Linux lawsuits, sets a new precedent. It is rare that customers have been held accountable for the make up of a product purchased from another company. This situation could give a whole new meaning to the phrase "Buyer Beware." For example, when you purchase a book, will you be required to ensure that the bookstore and publisher have the appropriate permissions for selling the book? Will you be held responsible if the author plagiarized some of the material in the book? When you purchase a car, should you check that the manufacturer owns the appropriate patents for the car's computerized systems? Taken to the extreme, this type of practice could seriously undermine fundamental assumptions about buyer liability and responsibility—a change that could diminish trust and sales, ultimately increasing the costs of goods sold.

How can this problem be resolved? Does open source software warrant a specialized solution or should we focus on resolving the intellectual property (IP) problem for all software? Can open standards present a valid solution? Should government be involved or is it up to the individual companies to sort out? Will the most effective solutions be national or international in scope? If you think this is an interesting game to watch from the sidelines, think again. How these issues play out over the next few years will determine the number and

variety of available software, the prices, and the degree of interoperability, among other things. This book does not claim to have the answers to these questions, but it does present insightful discussions along with recommendations for at least partial solutions. It should be noted that a few of the authors were in favor of intellectual property right protection and enforcement through lawsuits if necessary. They had planned to write articles discussing their views. Unfortunately, their organizations became aware of the authors' plans, which were promptly stopped for fear of political or legal ramifications. This may signify one of the key challenges in resolving the OSS intellectual property issue—lack of communication. If those involved are wary of prohibited from talking freely, the likelihood of developing a workable solution without government intervention seems minimal.

Government intervention may involve anything from legal rulings that set precedent for future cases to legal reforms that change IP laws. Complicating this matter is the fact that national solutions will not necessarily transfer to the international marketplace, creating a situation in which a company may have IP rights in one country but not another. Perhaps the answer is not for government to attempt to fix the problem but rather to fix the system. By looking at the intellectual property rights systems and processes around software, it may be possible to develop a healthier infrastructure, both domestically and potentially worldwide, that would enable the information and communications industry to solve the IP problem themselves.

While the lawsuits bring up pressing issues and the resulting FUD[1] has certainly been rampant, open source software adoption continues to thrive. In fact, adoption of open source software appears to be on the rise. Forrester's survey earlier this year found that over 60% of CIOs either had adopted or were planning to adopt open source applications. A recent survey by *InformationWeek* found open source adoption to be thriving, stating that two-thirds of respondents currently use open source and 16% plan to begin using open source in 2005.[2] While unbeknown to most, open source also serves vital functions in bringing you the Web. For example:

- 24 percent of all websites are written in PHP
- 65 percent of all websites run on Apache
- 76 percent of all mail servers are Sendmail
- 90 percent of all domains are controlled by BIND
- 99 percent of all web browsers are based on the original NCSA Mosaic browser[3]

Open source software appears to be alive and well. It is slowly infiltrating the market and even taking an important place in the product lines of large corporations. Governments are starting to use open source software and those who cannot even begin to define the term "source code" can rattle off "open source" with ease. Perhaps what we are really witnessing is the open season *of* open source.

Open Season of Open Source

Open source, once regarded as the hobby of a few devoted—and eccentric—developers, has now hit mainstream. Not only has it become a part of the mainstream, it is changing it. The adoption and offering of open source software by such technology behemoths as IBM, a company that ranks as the number one IT patent holder in the world, attests to its impact on the market. More importantly, it serves as evidence that the open source movement is changing fundamental and long-proven business models. Companies are beginning to look beyond basic business assumptions, which dictate that proprietary software is the surest source of large revenue streams. Instead, they are starting to build alternative business models that deliver software free of charge and generate revenues from support and services. Sun Microsystems' announcement that its newest release of Solaris 10, a version they spent millions of dollars and several years developing, will be available for free along with the source code. The free of charge element has precedent. One only has to pull up the websites of most major cellular phone companies to recognize that the hardware and software is readily offered without charge on some of their models. These companies will make substantially more revenues by charging for everything from airtime minutes, to Web access, to instant messaging. Releasing the source

code, however, is a recent strategy in the proprietary software world. Companies such as IBM and Sun are realizing that by releasing the source code, more products will be developed that grow the market and thus the need for their services.

Why are traditional proprietary companies opening up vaults that have been under lock and key for years? The answer is simple: user demand. Users that range from small business owners to the US and European governments are looking to open source as a viable alternative to vendor lock-in and a potential means of cost reduction. While most users are not betting their business on open source with mission critical applications, they are testing the waters—implementing open source software in select areas to determine aspects such as reliability and return on investment. Open source is slowly evolving into a viable software alternative for business, and the structures needed to support that new role are emerging. Critical elements such as common terminology, services, and support models are being established. These elements will make the adoption of open source more palatable for users who want the benefits of open source without the in-house technical expertise. As one large financial institution that I interviewed stated, "We are interested in open source but we are in the business of banking, not software development. The availability of services and support for OSS makes this model a practical alternative, at least in some areas, to proprietary software."

The challenge is for the open source community to grow into this new role while still maintaining its fundamental ideals of openness and community effort. Proprietary companies are beginning to hire open source developers. Can these developers continue to work in the same manner with a barrage of lawyers now overseeing their efforts? Can the open source community, as we know it, survive now that the big players are getting involved? The open source community has a tradition in which developers only work on projects that are interesting to them. How will this community tap that tradition and expand it so that full and reliable solution sets are available—even the elements that are not of interest to the developers? How will this community ensure that open

source offers the type and quality of solutions that customers are willing to bet their businesses on?

These are just some of the challenges discussed in this book. The book is not a crystal ball; it cannot predict how open source will evolve. However, it does provide insights from various experts across different fields with the intention of stimulating thinking and communication around open source and some of the challenges it faces. The first section, *(R)evolution?,* looks at how open source is changing and will need to change to meet market needs. It examines the open source model as a whole, encompassing other areas of open source such as hardware and research. Section two, *Open for Business*, looks at the business of open source. It discusses alternative business models for open source and addresses the challenge of monetization. This section also examines the decision process involved in choosing software and how open source fares in that process. The third section of this book, *"Open" Open Source*, investigates standardization as a strategic tool for addressing some of open source's challenges and presents alternative strategies for using this tool effectively. Finally, the fourth section, *Quo Vadis, Open Source?*, analyzes some of the challenges facing open

Endnotes

1   FUD: Fear, Uncertainty, and Doubt

2   D'Antoni, Helen, "Open-Source Software Use Joins the Mix," *InformationWeek* November, 4, 2004, **http://www.informationweek.com/story/showArticle.jhtml?articleID=51201599&tid=5979**.

3   Smith, JT., "Do You Suffer from Open Source Phobia?" *Darwin Magazine,* March 2004, **http://www.darwinmag.com/read/030104/open.html**.

Sherrie Bolin
Editor in Chief

Is open source a revolution in technology or simply an evolution? Some say that it will transform information and communications technology (ICT) business models and the way we think about software. Others say open source is just another alternative in the technology development process. This section takes a look at this question and discusses how open source is evolving and should evolve in the near future.

Revolution?

Open source has the potential to revolutionize the way we develop, distribute, and use technology. Its collaborative model for development along with the availability of source code and the enticing price tag (oftentimes free) have led some to predict that the ICT industry will have to let go of traditional business models based on proprietary technology. They anticipate that software—and hardware—will be available free of charge with the purchase of service and support packages. However, the value of open source is not just in the acquisition cost; it's in the source code. Traditionally, customers either had to pay dearly for the development of software to meet their specific needs or function with "out of the box, one size fits all software." With the availability of source code, organizations and individuals have the ability to more easily modify software to fit their needs. Even those without the technical expertise to make the modifications have the option of hiring developers to perform this task—a less expensive venture than building from scratch. One of open source's greatest impacts, therefore, may be the expansion of customer choices from "Buy vs. Build" to "Buy vs. Build vs. Modify."

Open source may also revolutionize the way that software and hardware are developed. Contribu-

tors to projects will be those with the appropriate expertise and interest, coming from across organizational and geographical boundaries. Projects may benefit by receiving comments and input from a wide community of developers rather than just a handful. This method has worked well in the open source community. However, with traditional proprietary technology companies now hiring open source developers, how will this model adapt to corporate information sharing restrictions and practices? Will software that is created by open source developers within the confines of a corporation be freely distributed? If that software is never deployed outside of the corporation, will corporations still be willing to share those innovations?

The open source movement could potentially revolutionize business practices outside of the technology industry as well. Will other industries start to see the value of sharing or giving away information or products? Will they develop new business models? For example, changes are occurring in the publishing industry. Larry Lessig released his book, *Free Culture*, under a Creative Commons license. Not only is the online version available free of charge, but individuals may copy or make derivative works for non-commercial purposes as long as attribution is given. Consumers may also purchase a hard copy of the book if they wish. Thus far, sales of the book have not been detrimentally impacted and online viewing of the book has likely facilitated hard copy sales. Dan Gillmor, technology columnist for the *San Jose Mercury News*, posted drafts of chapters for his book online as they were written for comment. By obtaining and incorporating some of those comments back into the work, the final product was likely improved and more targeted to market needs. The book, *We the Media*, is now available online free of charge

or for purchase from bookstores. Changes in research are occurring as well. Owen Densmore's article in this section, "Open Source Research: A Quiet Revolution," describes how research is being facilitated through an open source model.

Evolution?

Perhaps open source is just an evolution of software development, a natural extension of the software business with the advent of online collaboration tools and the Internet. In the end, it may not be a revolution but simply an alternative way of developing and distributing some types of technology. In his article "Open Source Hardware: Then Versus Now," Andrew Huang illustrates that the open source movement actually began with hardware years ago. Also in this section, Andrew Updegrove examines areas that the open source community will need to focus on to keep the movement from becoming just a historical footnote.

Regardless of whether open source ends up being a revolution or simply evolution, one thing is certain: open source is evolving. The articles in this section talk about its recent growth from the early adopter stage to commoditization. As part of that growth, essential elements, such as support infrastructures and even professional certification need to be addressed. For insight into the certification of open source developers, read Ted Cook's article on the subject.

In the end, it will be up to the open source community to determine its ultimate impact on the market, the business world, and society. That impact will depend on the community's ability to meet market needs while holding on to its core values.

Sherrie Bolin
Editor in Chief

nering the attention of government organizations and large information and communications technology (ICT) vendors alike. How or whether it will grow to become a popular alternative to proprietary software or even a long-term change agent in the ICT industry remains to be seen. To accomplish this, open source must be able to supply the market with comprehensive solutions that are reliable and trustworthy. Trust will become an increasingly important issue if open source is to be the basis for mission critical applications. To do so, a model needs to be developed that either establishes accountability or provides for testing and certification. In addition, vendors must be able to monetize open source. These vendors will need to determine what opportunities open source can generate, what problems it may create, if solutions to those problems can be monetized, and what the market will require from technology in the future. Creating viable monetization methods may have an additional benefit by encouraging traditional ICT vendors to adopt an "accept and use" model versus an "embrace, extend, and extinguish" philosophy. Regardless of whether you are a potential open source adopter, vendor, or service provider, this section is intended to help you make more informed, and hopefully innovative decisions, on open source.

Bet Your Business on Open Source

Should you bet your business on open source? Has it matured enough to offer the reliability and quality necessary for mission critical applications? Some organizations have taken the plunge, implementing open source in every aspect of their technological infrastructure where available. Others are taking a more cautious approach by taking on an open source project in one or two places and then measuring the results. It is likely that most businesses will continue to take this incremental approach, at least for the time being. Perhaps, one day businesses will be completely reliant on open source technology, or they may just strategically mix open source and proprietary software to suit their specialized needs. To gain a better understanding of how businesses choose software, particularly open source software, read the article by Joel West and Stephen Kwan entitled "A Conceptual Model for Enterprise Adoption of Open Source Software." To understand the open source adoption decision making process from an information systems (IS) point of view, read Kelly Phillipps' article. Once businesses have made a commitment to use open source, they would be well advised to read Randy Terbush's article to understand the intricacies and the elements needed for successful implementation of open source technology.

Monetize Open Source

Does open source present a viable business model for the software and hardware industries? In actuality, it presents or calls for a variety of different business models. The monetization of open source will derive from those insightful enough to predict market needs with the chang dth6t   well-pub

ness models that create complement ecosystems around a vendor's core value proposition, read Stephen Walli's article, "Open Source and Open Standards: The Business Models in Context." In addition, Matt Assay looks at open source as a strategic distribution mechanism and examines different types of open source business models. In these models, the reputation of a developer or a vendor (dubbed "Reputation Property") takes on more importance than intellectual property. Eric Blossom provides a high-level view of strategic

business models and examines the impact that one area could have on the industry—software radio.

Open source is open for business, presenting the opportunity for new business, pricing, and distribution models to emerge. The key is that these new models must be grounded in solid, sustainable businesses practices not only for open source to survive, but also for prospective customers to have the confidence and trust that these vendors will exist in the future. After all, avoiding vendor lock-in may be a goal of open source users, but having no vendor available to turn to for support or for new solutions is not a welcome alternative.

Sherrie Bolin
Editor in Chief

How can you create more open, open source? After all, if the source code is available, isn't that open enough? Perhaps the answer lies in how "open" is defined. Open can simply mean freely available source code. It can also describe specifications that are available to anyone free of charge or specifications that are available under reasonable and non-discriminatory (RAND) terms. Open can refer to the process in which a specification or technology was created. For example, a specification, software, or hardware may be considered open if the process was non-exclusionary. On the other hand, it may be considered open if a set of industry entities participated in the process and the source code or specification is available to all. Clearly, the definition of "open" depends on your perspective and on your end goal. To many people, open indicates interoperability and escape from vendor lock-in. One thing, however, is certain: the inclusion of the word "open" in a product description or marketing material generates positive results. While the term might occasionally be abused, the key is that customers value this feature—however they may define it—which places continued pressure on industry to become more open in all senses of the word.

Standardization may enable open source to become more open in several ways. First, it can provide the mechanism for increasing interoperability. People often assume that the ability to access source code guarantees interoperability with other applications. On the contrary, it takes a great deal of work on the part of developers to achieve this goal—a goal that can be facilitated through open standards processes. Second, standard setting organizations (SSOs) can bring together numerous and often competing organizations to develop open specifications that will hopefully see widespread implementations. The process can be open to any who wants to participate, as in the IETF, and specifications can be distributed free of charge. Finally, SSOs can include users in the process in a way that captures their requirements without requiring software development expertise.

Standardization has the potential to bring other benefits to open source as well. Traditionally, there is evidence that standardization can drive down overall costs (including research and development), increase market adoption through multiple implementations, and stimulate innovation. In the case of open source, it may also present solutions to some of the more pressing challenges. For example, specifications in SSOs are usually licensed under royalty free or RAND conditions. Inclusion of open source in these specifications may help to mitigate legal liabilities around potential patent infringement. In addition, standardization may boost customer confidence in a product both in its ability to interoperate with other technology and in its quality. Finally, standardization may help to provide the missing link between open source and proprietary software. While some may envision a world in which only open source software (OSS) reigns, it is more likely, at least in the foreseeable future, that OSS and proprietary software will need to coexist and interoperate.

This section examines the potential role of standardization in open source software. John H. Terpstra begins the section by looking at the place of standards in the ICT industry with an emphasis on open source. Don Cragun, a noted

expert in standardization, illustrates how standardization of open source can be achieved by using the UNIX wars as an example.

Open source standardization, however, is more than just squeezing open source into predefined standards processes. While the two communities both have the same goal of openness, their definitions and their methodologies for achieving that goal are often vastly different. To gain a better understanding of the different approaches, read the article by Richard Soley and Jon Siegel entitled "Open Source and Open Standards—Working Together for Effective Software Development and Distribution." Graham Taylor takes this to the next level in his discussion of how open standards combined with open source software can help support the goals of the European Union.

When we think of standardization, we usually think of specifications that will allow disparate applications to interoperate. To achieve this goal, however, we have to start with the people that are behind this work and recognize that agreed upon processes and a common terminology become vitally important. One only has to talk with those who participated in standardization as the infor-

mation technology and telecommunications industries began to merge to understand that different definitions of the same term can create real problems. As an example of how this situation can escalate misunderstandings, consider something as simple as a multiple storied building. An American defines the floor that a building is entered into as the "first floor" while an English person will refer to it as the "ground floor" and would then refer to the American "second floor" as the "first floor"—an easy opportunity for miscommunication. For further insight into how this challenge can be resolved read Richard Bodo's proposal for a different type of standard—terminology for transparency in emerging business communities.

Standardization can serve as a powerful tool for increasing the market viability of open source. In addition, open source can expand the market of standards setting organizations and the members they serve. If this collaborative effort is to be used successfully, however, the communities will have to work together to define the methodologies and goals that will meet both their needs and the needs of the market while preserving their core values.

Quo Vadis, Open Source?

Sherrie Bolin
Editor in Chief

Section 4

Numerous challenges face the open source community if it is to grow and prosper. Some of the challenges are unique to this movement, such as the propensity for developers to only work on what interests them rather than what is needed to solve a business problem. As discussed earlier, business methodologies will need to be established and proven. Availability of support also remains a concern although that should dissipate as more companies realize the revenue opportunities in this area.[1] A recent study funded by the World Bank found that potential adopters are concerned about open source's "unproven business proposition" and its "unreliability."[2] Finally, road maps will need to be more clearly defined and revision cycles will need to be modified to fit into more realistic business cycles.

At the top of the list of concerns are, of course, intellectual property (IP) issues. How detrimental have the rash of lawsuits been against open source endeavors? How can the open source community protect itself against IP infringement cases? What precautionary steps should open source developers take to avoid IP infringement and what level of confidence can they offer consumers? In his article, Larry Rosen frames the issue of software patents and puts it into a realistic perspective. Bruce Perens describes the challenge of intellectual property in standards and proposes remedies that can be implemented at the governmental level. In addition, Danny Weitzner ties the world of open source and open standards together by illustrating how the two communities worked together in the creation of the World Wide Web Consortium's (W3C) royalty free patent policy. The articles illustrate that IP challenges, while taking precedent in the press, can be addressed and are not unique to open source.

Other issues that are examined include privacy and business viability. Frederick Lane examines the impact of open source on privacy in his article, "Can Open Source Save Personal Privacy?" Finally, Carl Cargill wraps it all up with his analysis of open source in the market. His position that "open source is a business model, not a religion" may illuminate how challenges to open source can be looked at from a different perspective and perhaps overcome.

As stated at the beginning of this book, the open source community has some important choices to make. Will it place market adoption as a priority and then develop the business processes and methodologies to stimulate and support such widespread adoption? The community does not have to accomplish these using traditional means, but it will need to develop a solid foundation using its own strengths to instill trust in prospective customers. Alternatively, will the open source community be content to conduct "business as usual." If so, it may continue to present a viable alternative to some proprietary software and to companies with a penchant for in-house development. However, lacking a solid open source business infrastructure and support system, mainstream adoption will be illusive. The choice is up to the open source community as a whole. As for those of us who watch in eager anticipation, we can only ask "Quo Vadis, Open Source?" "Where are you going?"

Endnotes

[1]   Forrester Research, "Forrester Research Identifies the Barriers to Mass Adoption of Open Source in the Enterprise," October 25, 2004, **http://www.forrester.com/er.press.release/0,1769,957.00.html.**

[2]   The Dravis Group, "Open Source Software: Perspectives for Development," prepared for the World Bank, 2003, **http://www.infodev.org/symp2003/publications/OpenSourceSoftware.pdf.**