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## The Open Source Business Resource

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*The editorial theme for the June* issue of the OSBR is "women in open source". We are pleased to present an issue entirely written and edited by women who are active within their open source communities.

*This issue does not focus* on gender. It does discuss some important issues, including: How do we define and encourage contributions? How do we extend open source interactions beyond the virtual community into our local geographic community? How do we build business models around open source skills?

*As always, we encourage readers* to share articles of interest with their colleagues, and to provide their comments either on-line or directly to the authors. We hope you enjoy this issue of the OSBR.

*The editorial theme for the* upcoming July issue of the OSBR is "collaboration" and the guest editor will be Stephen Huddart from the J. W. McConnell Family Foundation. Submissions are due by June 20--contact the Editor if you are interested in a submission.

**Dru Lavigne**

**Editor-in-Chief**

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*Dru Lavigne is a technical writer and IT consultant who has been active with open source communities since the mid-1990s. She writes regularly for O'Reilly andDNSStuff.com and is the author of the books BSD Hacks and The Best of FreeBSD Basics.*

*Whether you look at industry* studies, on-line articles, or perhaps even around your own company, you'll see that women make up a small percent of the people working in free/libre and open source software (F/LOSS). Over the years there's been a growing interest in why so few women participate in this rapidly growing community and, more importantly, what can be done to help encourage more participation. Fortunately, members of the community - both male and female - are actively ramping up their efforts to attract more women to the F/LOSS community.

*Resources such as LinuxChix.org, the* Geek Feminism Wiki (http://geekfeminism.wikia.com/), as well as publications, blogs, and articles written by and about women, draw attention to this growing, influential group of F/LOSS participants. Events, such as the Women in Open Source track at the Southern California Linux Expo (http://scale7x.socallinuxexpo.org/conference-info/scale-7x-women-in-open-source), help women network and connect with other members of the F/LOSS community, while also increasing their visibility.

*In this issue of the* Open Source Business Resource, innovative, energetic women discuss their specific projects, what other women in the field are doing, and their efforts to promote F/LOSS to people within their communities and internationally.

*Cathy Malmrose, CEO of ZaReason,* introduces women who make a variety of contributions to open source from all corners of the world. She also shares interviews with Belinda Lopez, Training Project Manager for Canonical; Brenda Wallace, well-know blogger from New Zealand; and Andreia Gaita, a Mono/Moonlight developer from Portugal.

*Cat Allman, Developer Relations Specialist* for the Open Source Programs Office at Google, discusses Google's efforts to reach out to the F/LOSS community. She also talks about their efforts to mentor high school and college students through the Google Highly Open Participation Contest and Google Summer of Code (GSoC).

*Angela Byron, Senior Web Consultant* at Lullabot and former GSoC participant, explains how fostering a healthy community around open source projects leads to better code.

*Emma Jane Hogbin, Web developer* and consultant, shares her experience with giving back to the community.  She describes how a business model based on an experience economy is helping her open source business expand and gain new revenue streams.

*Audrey Eschright, developer for Elevated* Code and co-chair of the Open Source Bridge conference, offers an example of how to organize an open source project to encourage community development. She also suggests some tools that can make collaboration easier.

*Stormy Peters, Executive Director of* the GNOME Foundation, provides an overview of the community around the foundation and offers a look toward the future of the GNOME desktop environment.

*Melanie Groves VonFange, an open* source advocate, uses BSD as an example when looking at what role open source advocacy plays in increasing open source usage.

*Selena Deckelmann, PostgreSQL specialist and* co-chair of the Open Source Bridge conference, tells how the Portland open source community has increased participation by women and how other communities can benefit from their experiences.

*Amanda McPherson, Vice President of* Marketing and Developer Programs of the Linux Foundation, asks "So Are You a Contributor?" She also talks about the Linux Foundation's efforts to encourage a culture of inclusion.

*The articles in this issue* illustrate how the authors, their colleagues, and efforts within their communities are helping F/LOSS projects become more appealing to women. As a result, the F/LOSS community has become more inclusive overall, opening itself up to a diverse world of new contributors.

**Rikki Kite**

**Guest Editor**

*Rikki Kite is the Associate Publisher of Linux Pro Magazine and Ubuntu User and writes a blog that highlights women in open source  (http://linuxpromagazine. com/roseblog). She is former editor for Sys Admin magazine, UnixReview.com, The Journal of Linux Technology, and The Perl Journal. She received her MSJ from the University of Kansas in May 2008 and wrote her thesis on women in open source.*

# An International Look at Women in Open Source

*"Be polite. Be helpful."*

LinuxChix motto

When attending conferences, working with various open source teams, and generally interacting with people in the open source world, we see women as a small representative minority. The disparity leaves us wondering: "How do we better activate 50% of the population?".

The question, "How do we include more women?" has been asked many times and answered in many ways. Cathy Malmrose (http://allaboutubuntu.word press.com/2007/06/26/zareasons-ceo/), CEO of ZaReason (http://zareason.com), a Linux hardware company, stated, "possibly the most immediately effective solution is to showcase women internationally and their contributions. Simply talking about what women are doing all over the world creates an atmosphere of acceptance, encouraging more women to try contributing, no matter where they are located or what their situation is. Our goal is to normalize the experience of having women on open source projects". This issue of OSBR is a powerful effort to do just that.

This article provides a glance at women in open source internationally. It is by no means comprehensive and is based solely on a random sampling of women who are currently contributing. The goal of this article is to give you a sense of the breadth and depth of women contributing to open source.

**Examples of Successful Contributors**

Anyone can contribute to an open source project regardless of age, gender, or skill. One character trait common in successful contributors is how well they can bridge cultural gaps.

One woman who crosses continents particularly well is Donna Benjamin (http://geekfeminism.wikia.com/wiki/Donna_Benjamin) of Melbourne, Australia. She spoke recently at The Open Road (An International Perspective) conference and currently is Executive Director of Creative Contingencies (http://cc.com.au). When the author contacted Donna for leads to other women in open source internationally, Donna sent seven solid leads, providing more than ample assistance for writing the article. Donna's response was typical of many open source contributors: answer the question and answer it thoroughly.

Some women contribute by writing code. Valerie Aurora (http://valerieaurora.org), currently on the west coast of the US, is one of the best-known female Linux kernel hackers. She has been contributing to the Linux code base for 14 years. Mackenzie Morgan (http://wiki.ubuntu.com/MacoMorgan), currently on the east coast of the US, fixes bugs and facilitates other contributions to Ubuntu Linux. Mackenzie works on the Ubuntu 5-a-day challenge, an initiative that encourages people to work on five bugs every day.

Lydia Pintscher (http://lydiapintscher.de) of Germany contributes to KDE and Kubuntu while fulfilling her position as the community manager for Amarok (http://amarok.kde.org/), an open source music player. The success of Amarok is in part due to her ability to negotiate well with the many people who are implementing changes to the software.

A Systems Analyst currently in Arizona, US, Lisa Kachold (http://geekspeakr.com/speaker/lisa-kachold) has worked in many countries including America, Germany, England, Sweden, India, and Persia.

# AN INTERNATIONAL LOOK AT WOMEN IN OPEN SOURCE

Her favorite aspects of open source are: i) creative solutions; ii) open ended opportunities to flex one's ability; and iii) group process development. Unfortunately, the ratio of men to women in her experience has been 5 to 1. Lisa notes that "a great deal would have to change to make a friendly environment for all but the very thick skinned, uber geek women".

The women who contribute to open source may be spread across continents, but they cover a wide variety of interests and types of contributions. Many contributors talk about their work as if it was play. Miriam Ruiz (http://www.miriam ruiz.es/weblog) of Spain, a Debian (http://www.debian.org) team member, enjoys contributing to games as well as playing on them. Not surprisingly, she works on the Debian Games Team.

Andreia Gaita of Portugal is a Mono (http://mono-project.com) and Moonlight (http://www.mono-project.com/Moon light) developer. One look at her World of Coding blog (http://blog.worldofcoding.com/) shows that she loves her work. A common thread throughout the population of women in open source is that there are many ways to enjoy contributing to open source projects.

Some women in open source are highly visible like Stormy Peters (http://www.stormyscorner.com/), the Executive Director of the GNOME foundation. Stormy lives in Colorado and presents at many major open source conferences internationally. Her presentation, "Would You Do it Again for Free?" (http://www.slide share.net/stormypeters/would-you-do-it-again-for-free-presentation) is a classic in sparking thought for how we manage and motivate open source projects and the people behind them.

Women like Vidya Ayer (http://www.svaksha.com/) of India provide strong voices. Vidya volunteers across a broad base of open source groups and offers to speak at conferences through geekspeakr (http://www.geekspeakr.com/).

Some women in open source add both spunk and personality to the field. Carla Schroder's Linux Networking Cookbook is an official statement of her computing prowess, but it is her short, pithy articles that will live on for many years, being referenced by others (http://www.oreillynet.com/pub/au/1909). Her unique talent is seeing new insights and phrasing them in a way that is memorable and motivating for contributors.

**Belinda Lopez**

For a more thorough look at the opinions of individual women, we interviewed Belinda Lopez (http://ubuntugirl.live journal.com/) of the US, Brenda Wallace (http://coffee.geek.nz/) of New Zealand, and Andreia Gaita of Portugal.

First, Belinda Lopez, now a Training Project Manager for Canonical, the company behind Ubuntu.

**Q. What would list as your most enjoyable contribution to open source?**

**A.** Putting together groups or individuals that are unknowingly working on the same type of contributions. I often see myself as an enabler of others, so when I find two different groups with the same goals, often working on the exact same thing in parallel, I try to introduce them so they can work together and work smarter, not harder.

**Q. Would you describe your work as crossing borders beyond your company and your local user group? What countries have you interacted with significantly?**

**A.** I've had the good fortune to travel to France, Switzerland, Canada, England and Spain all through free/libre open source software (F/LOSS) work. Meeting folks from other parts of the world certainly changes your perspective and gives a nice window into their needs and challenges. I find the European and UK user groups to be much more enthusiastic than those in the US. The US groups, at least in Ubuntu, are often business oriented whereas European groups are often more into F/LOSS because it is F/LOSS.

**Q. In your day-to-day work what is the percentage of male to female? Would you prefer it to be different?**

**A.** Company wise, the mix is about 90% male to 10% female. About 7% of those females are in administrative type positions and the percentage of truly technical females is probably about 2 - 3%. I would prefer it to a bit more balanced.

**Q. You probably have many ideas for how to encourage more women to join open source projects, but which do you feel would be most effective to implement now?**

**A.** There are many types of contributors to open source and I often feel the ones we need most are the most undervalued. The F/LOSS and Linux communities do a great job of talking to themselves and promoting within but we say we want to reach everyone. In order to reach those new people, we need to encourage those currently not as technical to become involved and we need their feedback. I was at an event with female open source leaders and someone said they only wanted to talk to "real kernel hackers" and not human resource (HR) type people, who they felt were really not in the same category as coders.

I found it really sad that one, this person did not recognize the value of the feedback provided by "HR types", and two, they felt no desire to help those HR types become contributors.

So, in other words, encourage EVERYONE, not just coders or hackers. Let everyone know that we need and welcome their feedback and contributions.

**Q. As you grew in the open source world, did you rely on mentors, personal motivation, colleagues, or others?**

**A.** Personal motivation played a great part. Now that so many are searching for jobs, they often ask me about jobs in open source--they are looking for a short cut. I spent years teaching myself everything I could about F/LOSS and Ubuntu in order to position myself for my current job. There are no shortcuts, you have to be willing to put in the time to learn and not just expect someone to hand you a great position. Many F/LOSS communities are built on the contributions of volunteers, so you have to be willing to be a volunteer before moving into paid positions.

**Q. Do you see any road blocks to open source growing internationally?**

**A.** I see it easier to grow internationally than in the US. So many US companies are too invested in the proprietary models, but countries like India, Brazil and China seem to have easier paths to adopt more open source than in the US. In the US, the first questions I am asked are related to security. If it's open, it can't be secure. Fighting that perception is a huge obstacle in the US.

**Brenda Wallace**

A well-known blogger from New Zealand, Brenda Wallace writes that her most enjoyable aspect of working in open source

is, "seeing it used all over the place--especially by those strange companies that officially don't touch open source and yet don't realise their core business runs on it.

Brenda was asked the following questions:

**Q. In your day-to-day work, what is the percentage of male to female? Would you prefer it to be different?**

**A.** In my workplace, it's 10% female but only 4% are technical as the rest are accountants, receptionists, etc. I'd like it to increase, but this can't be rushed through blatant positive discrimination.

**Q. You probably have many ideas for how to encourage more women to join open source projects, but which do you feel would be most effective to implement now?**

**A.** Mentors work best, in my opinion. Women geeks can pair up with young women who turn up at any hackfest, especially if they look nervous. It can be hard to obtain credibility when you're new and also somehow demographically different to everyone else in the room. Safety in numbers is also true.

**Q. As you grew in the open source world, did you rely on mentors, personal motivation, colleagues, or others?**

**A.** I turned up at the right projects at the right time, and suddenly I was filing a patch a day. I had previously attempted to contribute to the wrong projects, and with a nick (username) that was clearly female. Choosing a gender neutral nick and then contributing well got my foot in the door on the first project I really contributed to. Then my reputation, and confidence, grew from there.

**Q. Generally, what improvement would you most like to see in open source?**

**A.** Less tolerance of anonymity. This is the cloak behind which the worst discrimination is found. When someone knows their actions are on record, and are tied to their own name, they will behave differently. Remind the community that before their next job interview, they'll be checked out via a quick Google search. I'd like for some of the worst comments...to be indexable against the [person] that said it.

**Q. What are your favourite aspects of the open source field?**

**A.** Low barrier to entry. A 14 year old enthusiast, a 30 year career veteran, and a chainsmoking ex-bus driver living in a one room hut in the rainforest all have the same opportunity to modify the code. The documents are free, the code is free, and you are free to do as you wish within the very open licenses.

To highlight this point, the author spoke with Valerie Aurora. Valerie's first experience writing code was when she was six years old and changed the screen color in BASIC. Valerie looked at the Linux kernel for the first time for a class project when she was 20 years old.

Valerie notes that plenty of contributors are "people who didn't come to computers until they were adults. I know several people like this who are now kernel programmers and I don't want people to think that they can't get into the field."

The author concurs that in open source, traditional age barriers expand in both directions. The Linux User Group meeting she attends most regularly, BALUG (http://www.balug.org/), is sometimes attended by women who are well out of their 20s and 30s.

At the same time, the author is able to bring her daughter to most Linux conferences. Her daughter attended her first conference, Ubuntu Live, at 5 years old and continues to attend conferences alongside her mother.

The author notes the following: "at this year's SCALE (http://scale7x.socallinux expo.org/) there were more females in attendance than at any other Linux event I have attended. Admittedly, many of them were skipping school to attend, but it was wonderful to see them exploring the show floor and doodling on sketch pads during the keynotes. Having a higher than usual percentage of girls gave me a glimpse that my daughter may have it easier than I did. I am thrilled to see people contributing at any age. The other day a granny came up to me and asked about my blog. She said, 'Could you be a dear and help me set up Ubuntu? My computer is really old and I think it will run better with Ubuntu on it." I was thrilled to hear this request. I am similarly thrilled when young ones are allowed and even encouraged to join in the fun".

**Andreia Gaita**

Across the ocean, Andreia Gaita in Lisbon, Portugal is working on a cross-platform browser embedding library with Gecko (http://en.wikipedia.org/wiki/Gecko_(layout_engine)) for the Mono project. Andreia gave the following insights:

**Q. What are your three favourite aspects of the open source field?**

A. People actually have fun with their work which makes for a much more relaxed and friendly working environment. The freedom to pursue other interests and switch projects when you're bored. The challenge of working with the best and brightest, amazingly smart and competent people that really push the limits.

**Q. In your day-to-day work what is the percentage of male to female? Would you prefer it to be different?**

A. Percentages can be misleading. Only counting the core contributors, percentage-wise, females are 3.3% in the whole group, and roughly 10% in my team, specifically. Of course, we're 32 on the Mono project and in the Moonlight team we're 12, so those numbers mean I'm the only female in the entire project. I'm only counting the internal team, not the entire community, and we do have a fairly large community. In general, though, you can count the number of women with your fingers, so let's just say the percentages are really low.

I don't care much about the gender of the people I work with; I care about working with great people, bright and motivated. The more the merrier.

**Q. Generally, what improvement would you most like to see in open source?**

A. Open source evolves according to the needs of the people developing it, and it often happens that those needs don't necessarily reflect the needs of users. There's always been a rift between users and developers in open source, and while there is an ongoing effort to address this problem, it's still not enough. Companies that use open source in their businesses need to realize that they have to contribute back to the effort if they want to have the best software. Nobody else can know as well as they do what they need, because they are the users, and they have skillsets that can be sorely lacking in open source projects, such as QA (quality assurance), management, documentation, and testing. We need better tools to facilitate user contributions--we can't rely on the same mechanisms that developers use, those are clearly not enough.

# AN INTERNATIONAL LOOK AT WOMEN IN OPEN SOURCE

**Summary**

The general consensus is that open source would be better served by expanding our contributor base to include a more balanced population of women. If we could activate the "other 50%" of the population internationally, perhaps open source could become the norm rather than the option that savvy businesses, governments and institutions use.

*Cathy Malmrose is a hardware builder in Berkeley, California. In the shadow of the University of California at Berkeley, Cathy is building a Linux hardware company to supply laptops, desktops, and servers to open source users. She grew up near Redmond and spent her early adult years in Austin. Her background includes working in education and software development along with founding a non-profit to support the effective use of technology in education. Cathy is currently enjoying working with the big OEMs in China and the many Linux contributors internationally. Her goal is to build hardware that showcases the superior power and effectiveness of Ubuntu and other Linux distributions.*

**Recommended Resources**

Women in Technology
http://www.oreillynet.com/womenintech

The Ada Lovelace Day Collection
http://ada.pint.org.uk/list.php

Systers
http://anitaborg.org/initiatives/systers

*"Business gets done between people who get along."*

Bill Joy, co-founder of Sun Microsystems (paraphrased from an interview)

It is easy to focus on the purely technical side of engineering: design, coding, documentation, licensing issues, and the release process. The interpersonal aspects of engineering also have a vital part to play. An important and frequently overlooked part of the successful free/libre and open source (F/LOSS) enterprise are the soft skills of communication, administration, and relationship building.

Google uses, creates and supports open source software (OSS) both as the raw material of code, and as a development model. My work in the Open Source Programs Office (OSPO, http://code.google.com/opensource/) at Google as one member of a three person Outreach team is almost entirely about the mechanics of building good relations between the F/LOSS community at large and Google. This article describes our day-to-day tasks which are variously focused on student programs, external communications, event management, and financial administration.

## Google OSPO

Google's OSPO team is responsible for reaching out to the F/LOSS community, primarily, but not exclusively, outside of Google. We keep communities informed of the value Google places on OSS development. Giving back to the F/LOSS ecosystem that has given Google so much value is the right thing to do, and hopefully our outreach in turn will help the community feel good about Google.

Our Outreach work involves a variety of programs and activities. Other members of the OSPO team code on open source projects, help Googlers release their code under open source licenses, and make sure that Google uses open source code from external projects in accordance with all licensing terms. The Outreach team also focuses on the "high-touch" side of "high tech".

As a job description, building relationships can cover a lot of ground. Primarily, I work on organizational and people relations, largely concentrated on communicating what Google is doing in and around F/LOSS. My day-to-day work includes:

• student programs
• events
• external communications
• internal adminstrative work

The following sections discuss these duties further.

## Student Programs

The most visible and arguably most influential part of our work is our student programs, Google Summer of Code (GSoC, http://code.google.com/soc/) for college students, and Google Highly Open Participation Contest for students ages 13-18 (http://code.google.com/opensource/ghop/2007-8/). Both programs offer the combined benefits of introducing students to OSS development and community. These programs help to:

• move the mentoring projects forward in the short run

• train the participating members from each project in mentoring skills

• develop a pool of potential new contributors to open source projects

GSoC is currently in the middle of its 5th year, with 1000 students from 70 countries working with 150 different F/LOSS projects. My specific work in the program includes:

- compiling and publishing statistics on the 4 previous instances of the program

- assisting with managing the student members mailing list and responding to questions

- giving informational presentations about the program at conferences

- conducting surveys of past participants to measure the value of the program to them and the F/LOSS projects they worked with and to look for ways to improve the program going forward

- providing some assistance in choosing the mentoring organizations at the start of the program

- coordinating the Mentor Summit for a subset of student mentors from each participating F/LOSS project at the conclusion of each year's instance of the program

**Events**

Despite the speed and utility of life on-line, people still benefit from meeting in person to exchange ideas, build consensus, make plans, and work collaboratively. In fully distributed groups, like most F/LOSS projects, having a chance to meet face-to-face can make all the difference in getting things done. Because of this, our group helps to support a number of conferences, un-conferences, code sprints, workshops, and hackathons throughout the year. These events are of all sizes, happen all over the world, and serve a variety of different F/LOSS projects and communities. Our support is sometimes limited to financial sponsorship. Other times it is more content focused in sending a Googler to speak, and/or paying for a speaker's travel.

Recent examples of events for which we did both include BSDCan, (http://www.bsdcan.org/2009/) in Ottawa, Canada, at which I and my colleague Leslie Hawthorn spoke on How to Get Started in Open Source, and SambaExperience 2009 (http://www.sambaxp.org/) in Gottingen, Germany where our fellow OSPO teammate, Jeremy Allison, spoke on Samba.

Our group also hosts a number of events, usually but not always on the Google campus in Mountain View, California. These range in size from 10 person working meetings to multi-day conferences of 500+ attendees. Sometimes these events are fairly simple to make arrangements for, but "host" is a fairly benign word that doesn't fully reflect all that can go into producing a larger event. I'm currently working on an annual invitation-only unconference for approximately 250 scientists where my tasks range from:

- suggesting invitees

- space and menu planning

- trying to figure out the local fire codes that might prevent an invitee from presenting a demonstration involving a flaming bacon lance

- making arrangements with NASA for the loan, safe shipment, and display of a tire from a space shuttle

**External Communication: Blogging, Speaking, Calendars**

A big part of my day revolves around communication: spreading the word about Google's efforts to support and contribute to open source.

Our group operates a blog (http://google-opensource.blogspot.com) which is in the list of the top 10 most read Google developer blogs.

If you've never tried to find and coax copy out of a steady stream of guest authors, you may not appreciate what goes into putting out 3+ posts a week, week in and week out. My role is mostly confined to copy editing or writing the occasional post, but I also do some of the herding of authors as well.

Our group gets dozens of requests for speakers every year, far more than any one person can handle. Last year I began to speak at conferences on behalf of Google, initially on GSoC, and more recently on "Getting Started In Open Source". It can be argued that many extremely fun activities are also challenging: I certainly find creating presentations and public speaking to be both.

Google's calendar (http://code.google.com/events/) shows developer-related events, including open source conferences. I spend a good deal of time adding F/LOSS events that our group is sponsoring, hosting, or that a Googler is speaking at or involved in. We also include community posting; if you are having an event, please add it to the calendar.

I also maintain an internal-only list of F/LOSS events as part of our funding efforts, in cooperation with several other departments at Google. It's important to identify events and contests that we might want to participate in far in advance so that we have time to take appropriate action.

**Internal Administrative Work**

Like every job, mine includes a fair amount of pick and shovel deskwork. Google's global presence means that we are able to do a lot of good, which in turns means there is a lot of paperwork.

As "keeper of the budget" for the Outreach team, I spend a good chunk of time per quarter reconciling our spending against our plans, and working with the finance team to make sure all invoices are accrued correctly.

**Recognizing Non-Technical Contributions**

The world of F/LOSS has many stars, but many more contributors--both of code and of the sort of non-technical work I do. As George Elliot writes in Middlemarch: "The growing good of the world is partly dependent on unhistoric acts".

I have been pleasantly surprised to see the role of Community Manager not only acknowledged but celebrated in recent years. All of us in the Outreach team hope this will in turn lead to the recognition of the contributions made by the many who further F/LOSS development in non-technical ways.

*Cat Allman has been involved with the F/LOSS community since the mid 1980s, including marketing and sales roles at Mt Xinu, Sendmail, Inc, and the USENIX Association. She works as a systems administrator, IT manager, and media buyer. Her outreach role in the Open Source Programs Office at Google is like slipping into a warm bath of global F/LOSS goodness.*

| Recommended Resources |
|---|
| GSoC Blog <br> http://googlesummerofcode.blogspot.com <br><br> Getting Started in Free and Open Source <br> http://www.bsdcan.org/2009/schedule/ attachments/99_BSDCan_allman_ lhawthorn.odp |

*"It's really the Drupal community and not the software that makes the Drupal project what it is. Fostering the Drupal community is actually more important than managing the code base."*

Dries Buytaert, Drupal Project Lead

From the outside (and often times from within, too), the success of healthy open source projects defies all logic. Scores of individuals from all over the world, all of whom have different skill levels, use cases, experience, native languages, and time zones, collaborate together in order to help make a project succeed.

How is it that all of this chaos comes together and creates something wonderful and useful? What lessons can be taken from how open source projects work and applied to our practical, daily lives and organizations?

This article will attempt to extrapolate some of the experience gleaned from being immersed for over four years in the Drupal project (http://drupal.org). Drupal is an open source website building tool which has transformed from a small hobby project in 1999 to a robust framework powering hundreds of thousands of websites today. Behind the buzzwords "social publishing" and "content management framework" there lies a diverse, passionate, and vibrant global community. We present some of the key ingredients to the community's success, many of which can be applied to any organization.

**Create a Great Community and Great Code Will Follow**

The overriding mission for a healthy open source project is retaining and growing its base of contributors.

The label "contributor" applies not only to the project's developers, but also to those who report bugs, review fixes, answer support requests, design interfaces, provide translations, help with marketing and evangelism, and write and edit documentation. Contributors are the lifeblood of any open source project as they drive the project forward.

It is vital to establish a fundamental understanding within the community that each of these types of contributions is an integral part of the overall project's health. Many key individuals who are driving forces within open source projects got their start by fixing typos in documentation or answering other users' support questions. A culture that values a well-written tutorial as much as a well-written application programming interface (API) is much more likely to attract and retain newcomers than a culture that values seasoned developers, or the marketing team, at the expense of everyone else.

Open source projects vary in their leadership models, from a "Benevolent Dictator For Life"–-a single project lead who has the ultimate veto on any decisions–-to more democratic, consensus-based systems, and everything in between. Often, leaders within an open source project spend most of their time encouraging and empowering individuals to drive the project forward themselves and then, to a large extent, get out of the way to let them work. Teams are encouraged to grow organically, thus spreading the work of leading the project around to a multitude of highly driven individuals. The term "cat herder" is used to reference the difficulty in managing a community of strongly independent individuals, each with their own motivations. As much as possible, decisions are made in the open, with active participation from as wide a swath of the community

as possible, since a diverse range of opinions will naturally result in a more robust solution.

**Empowerment: Transforming "Them" Into "Us"**

The ultimate goal is to make it as easy as possible, and to provide as many ways as possible, for a "user" to cross the threshold into a "contributor." Once this threshold is passed, several interesting things tend to happen. Individuals become more engaged and concerned about the project's future. Working directly with other contributors causes them to improve their skills and be exposed to new, horizon-expanding concepts, leaving them thirsty for more. They begin to form friendships and professional relationships with other contributors, strengthening their bonds within the community. Often, contributing can directly or indirectly lead to paid work which acts as another long-term retention tool.

So how does a project help users cross the contribution threshold? The most straight-forward way is to actively seek out and eliminate barriers to contribution. A driven member of the community must never encounter a situation where she wants to help the project improve and is told she does not have permission to do so. She must instead be given encouragement, pointed toward helpful resources, and paired with others in the community who have a similar itch. This allows her to complete work that is important to her, increasing her sense of ownership in the project, and to forge relationships with other contributors along the way, increasing her sense of kinship with the community.

It is important to make a distinction between barriers to contribution and the community processes that help guide those contributions.

The goal is not complete anarchy, but zero on-ramp to get started. Processes should be specifically engineered to help support the long-term viability of the project.

In the Drupal project, as in most open source projects, improvements to the software may be contributed by anyone, but they are only added to the core software after the changes are peer reviewed. Aside from the rather obvious benefits that this process has on the quality of the contributions, the effect this peer review requirement has on the community is three-fold:

1. It actively fosters an environment of mentorship. Experienced contributors are highly motivated to help newer contributors to understand more complex areas of the software because it directly benefits them to do so. As they gain experience, new users become better equipped to help in the review.

2. It helps keep the overall community's IQ level high, as members are constantly exposed to areas of the software they may not have seen before. This naturally occurs because often the easiest way for a contributor to get their changes reviewed is to review someone else's in exchange. It also actively works to prevent less desirable and community-damaging personality traits from manifesting themselves. After all, people won't get the peer reviews they require to accomplish their goals by being arrogant, insulting, and demeaning towards others.

3. It is extremely helpful to document in as many mediums as possible (text, audio, video, interactive classes, etc.) the options available to people who want to help, and what methods they can employ to be most effective. The sooner a frustrated user realizes that there is only a collective "we" where each contributes whatever they can to make the project

better, the sooner the transformation into contributor can take place. Users then learn to channel their frustration into an effective force for change.

**Fight the Disease of Perfectionism**

Many people are filled with trepidation about the idea of contributing to an open source project. The same peer review process that lends itself to building a strong community and great software can be terrifying to newcomers. Ironically, some of the people most affected by the paralysis of perfection are developers, the people in the best position of power to directly make sweeping improvements to an open source project. After all, thousands of people will be using their code and other developers will be carefully inspecting and evaluating its inner-workings. The discovery of an obvious bug or inefficiency by another developer can be easily interpreted as personally damaging to perfectionists, even when the intent is to make the code, and its contributor, better.

The natural problem-solving methodology for perfectionists tends to be withdrawal from the community and working quietly in isolation until they believe they've achieved something that is immune to criticism. This brings with it a whole host of problems, including:

1. Perfectionists never truly believe that their work is immune to criticism, because they can always find something that can be improved. In practice, their work can get permanently trapped in "analysis paralysis" and never see the light of day.

2. In the rare cases where the perfectionist feels that the ultimate, "immune to criticism" state is achieved, they can develop a deep emotional attachment to their contribution.

This can lead to the perfectionist growing irrationally defensive, and rejecting or dismissing useful critique from their peers.

3. Working in isolation eliminates transparency, and removes the ability for other contributors to help. In a worst-case scenario, the larger community has already developed a solution to a problem in parallel by the time the perfectionist is finished, leading the perfectionist to extreme frustration, particularly if coupled with a deep attachment to their own solution.

4. Working offline until perfection is achieved naturally leads to fewer interactions with the larger open source community. These interactions are absolutely key to a contributor establishing their own expertise and personality within the community, which in turn directly impacts how well they are received by others. These interactions are also key to helping others understand the proposed solution so that they may provide reviews in the future.

It is vital to establish a strong culture of "release early, release often" where people are encouraged to throw solutions against the wall and find out what sticks. This results in increased visibility for individual contributors and a lack of attachment to any one solution so that the best possible solution is found.

Fighting perfectionism does not equate to compromising in quality. Perfectionists can still contribute improvements that are up to their enormously high standards, and the project still benefits. The key difference that separates healthy perfectionist contributors from unhealthy ones is the participation in a collaborative problem-solving process, rather than an introverted one.

The community's processes should reward those who do the former, while encouraging those who do the latter to change their approach.

**Back to the Real World**

We have identified some elements of successful open source communities as well as some pitfalls to avoid. How does this information relate back to the practical, day-to-day lives of those managing businesses?

Focus on the people, not the product. A team that enjoys working with one another will naturally be more productive. Take a "mental health" check of the people on your team. Is there animosity brewing between two or more groups that could be solved by them working more closely together? Is decision-making in the hands of a single individual, hampering the feeling of ownership by other, capable people? Resolving these kinds of issues should take precedence over anything else.

Eliminate barriers for those who want to make improvements. Where not absolutely necessary for security or legal reasons, fight red tape in all of its forms. Remember that a frustrated person is often best poised to lead revolutionizing changes for the better as they have the motivation. Get the road blocks out of their way and empower them to get to work.

Fight the stagnation of perfectionism by encouraging collaboration. Put processes in place that help prevent perfectionists from getting trapped in their own heads, and get them working with others instead. Not only does collaboration help achieve a more robust solution, it can be used as a mentoring tool to help raise the collective IQ of your entire organization.

By applying some of the same principles that make open source communities successful, business owners can leverage some of the tremendous benefits of open source within their own organizations.

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*"If technology is felt to be becoming more and more inhuman, we might do well to consider whether it is possible to have something better--a technology with a human face."*

E.F. Schumacher in Small is Beautiful

In 2005, two Canadians began a one-year experiment in eating only locally grown foods, starting what is now known as The 100-Mile Diet (http://100milediet.org). In the open source world, we know about giving back to our software community, but this is sometimes to the detriment of our physical community. It is hard to see the businesses around us when so many interactions take place online and in the digital neighbourhood. The world has gotten smaller in the last hundred years and products made on the other side of the world are common in businesses and households.

As we muddle through our current economic crisis, we are encouraged to support our neighbours, their jobs, and to "buy local." Many household repair services must be locally obtained, but this is not necessarily true for software-related services. Many businesses are choosing to outsource the production of software and related support services to a cheaper labour force in other countries. As consumers, we know that buying locally often costs a premium; we also know it supports our neighbours and recycles our money back into our own physical community.

This article examines the importance of giving back to the local community. It uncovers ways for businesses to expand and gain new revenue streams when they focus on open source software (OSS) and use open business models.

**Connecting with the Local Community**

In 2007, I organized my region's first-ever local technology conference. It was called HICK Tech (http://www.hicktech.com) and celebrated all forms of technology, especially rural technology. I tried to emulate the feeling of a "big city conference" with 33 sessions presented during the one-day conference, kicking off with a keynote presentation the night before the sessions. For the second year of the conference, I relaxed into the reality of what it means to be local. I bought cowboy boots and rented the local hockey arena for the conference venue. The experience was both more local and more global. Speakers came from thousands of miles, and hundreds of yards, away. Top presenters included Nora Young (CBC), Heather Champ (Flickr.com), Meg Pickard (guardian.co.uk), and Michael Murray (formerly of nCircle.com).

The emphasis on local in the second year included a commitment to good brain fodder. All food served was grown, caught and produced within 100 miles of the venue. Although the coffee wasn't locally grown, it was roasted locally. Even the bag pipes, jazz duet and beer at the after-party were local. During the course of the day, over three hundred meals were served and less than one garbage bag of waste was produced. Coffee was poured into mugs, water into glasses, and mouths were dabbed with cloth napkins. The caterer took one small pail of food waste back to their garden. The conference was carbon neutral and carbon offset credits were purchased for the international speakers at the Gold Standard from Planet Air (http://www.planetair.ca/). The most expensive part of the carbon offset process was paying an electrician for an energy audit of the hockey rink.

Providing a local experience meant show-casing the region's unique characterist-ics. Owen Sound is a retirement community and many of the com-munity's active volunteers are retired wo-men. They engage in technology to connect with their grandchildren. HICK Tech was an experience these women felt comfortable engaging in. The speakers and attendees for both the first and second year of the technology conference were 50% women. Women registered early and sometimes even brought their husbands. The face-to-face experience made technology more human and more accessible to a group of people that were used to feeling left out.

**The Experience Economy**

In the meantime, my Web site develop-ment business was expanding its reaches and I had increasingly fewer local clients. I started to feel the local clients I did have were too small to be worth the hassle. They wanted on-site technical support and I felt uncomfortable charging my reg-ular rates for the work I was doing. I needed to change the way I was doing business. To support local clients, I did something that was both simple and rad-ical: I started offering my best service for free. For two hours each month, I meet in a central location with my clients and a wifi network. They bring their laptops and their questions and we work together to solve their Web site problems.

The idea to give away my services for free was in part inspired by my cousin, Nancy Jacobi, who runs a successful paper shop in Toronto (http://japanesepaperplace. com). She does not offer store-wide sales nor does she discount her prices. In her twenty years in business she has come to realise that customers who buy things on sale feel entitled to a discount, but those same customers never feel entitled to a free gift.

Instead of having sales, Ms. Jacobi gives away small samples of hand made paper to interesting customers as a gift for shop-ping with her. She gives the samples with integrity and intention. She tells the cus-tomer the story about the time she vis-ited the small Japanese village where the maker of that very paper lives and works. Through this gift giving she promotes loy-alty--both her loyalty to the paper maker and her customers' loyalty to her shop. Customers often feel obligated to pur-chase something in the future as a thank you for their free gift. Although not every-one feels this compulsion to return the fa-vour of a gift, many do. She is giving much more than the gift of free paper, she is also giving people the gift of the pa-per's story. In the experience economy, we find the cheapest price for a commod-ity, but will spend an extraordinary amount of money for an experience.

The Experience Economy was first de-scribed in the 1999 book of the same title by B. Joseph Pine II and James H. Gilmore (http://en.wikipedia.org/wiki/Experience _economy). In their book, the authors de-scribe five types of business offerings: commodities, goods, services, experi-ences, and transformations. Each of these offerings has a greater value to the consumer. While a chair is worth more than a tree, an experience is worth more than a service. The ultimate experience is one that can transform the consumer from one state to another. Whereas exper-iences are merely memorable, transform-ations are inspirational and have a sustained impact on the consumer that extends well beyond the experience.

The free help nights extend my business from being merely a service provider, to a transformational business which enables clients to maintain their own Web sites.

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As they are transformed, clients become aware of new services they want to purchase and thus move into a new business cycle where they purchase new services because of their transformation. The business cycle is transformed from a circle to a spiral.

Within the open source model, the concept of "free" is well known. It typically encompasses both the freedom to consume and the freedom to alter the product that is being consumed. Successful businesses are successful because they serve their clients--they meet a need and they do it well. To be successful in business, we need to first define success for ourselves. I consider my business successful when diverse communities are able to maintain vibrant and productive interaction using appropriate tools and open business practices. I also have monetary goals, but these are not directly tied to how I define success.

The free help nights that I provide my clients are a scalable business model. Each evening can accommodate up to ten businesses, and each of the businesses attending is able to afford a simple Drupal (http://drupal.org/) deployment. This is a task I can accomplish in less than a half day using Drupal's multi-site install. However, the client who has priced Web site development from a proprietary software developer knows that the value of this work is exponentially greater.

**An Open Business Model in Action**

OSS needs to support open business models. My clients know how fast I can deploy Drupal and I charge clients the full social value of their Web site. My speed, however, does not change the social value of the Web site. In the world of "good, cheap, fast: pick two" this speed actually increases the social value of the new Web site.

The faster I get at deploying Drupal, the more profit I make. That is what makes this model scalable: it focuses on rapid deployment with technical support at my convenience. In theory, I could have ten nights a month each with ten clients who wanted two hours of free, but shared tech support. Contrast this with the old model of helping out "just this once" to a small business who needs support, and it becomes obvious the traditional model of one-on-one support is not scalable. Supporting too-small clients with free help nights may start out as an income supplement, but by promoting client self-sufficiency, and managing support expectations effectively, these clients have the potential to become a full income for several people.

The group of people who attend the free help night, over half of whom are women, are a delight to work with. Their businesses include shops that sell food, yarn, books and bikes--the essentials in life. These are businesses that I want to buy from. They are businesses that I care about, run by people that I care about. As individual businesses receiving on-site tech support, they asked the same basic questions over and over again, but as a group they have started to develop a new comfort with technology. During the free help nights they are not the centre of my exclusive attention. There is less pressure to perform and they do not feel they are wasting time or money if they work quietly on their own. By working in a group, they see that others experience the same problems. From forgotten passwords to questions about installing modules, the group has begun to support itself. When someone else has already asked the first "dumb question" it is much easier to ask the next. Not including these first few questions, I have found the overall quality of help that each business is requesting to be more insightful.

It's as though waiting a week or two to ask the question has made each person a little bit smarter. It encourages participants to solve problems they can fix on their own, and to leave the "tough ones" for the free help night.

You've heard of "monkey see, monkey do"? This group has more of a case of "monkey see, monkey want." As the confidence of the group develops, the competition increases. "Colleen has a mailing list? I want a mailing list!" As their confidence increases, the group members take ownership over their Web sites and begin to help one another with their Web site problems. As the group becomes more comfortable with the technology they use, they are more likely to help one another--often answering each others' questions before I can get to them. Ownership and empowerment leads to growth and ideas. These ideas lead to feature requests that are larger than what I can accomplish in a single help session, which leads to paying work.

**Lessons Learned**

What does it mean to be a small, local business in the digital age? When is it appropriate to outsource and use a local work force? If your workers are remote, and you have no bricks and mortar location, how can you still support your local economy, and what is local anyway? These are difficult questions that every business needs to address. Having a monthly free tech support evening has given me the freedom to work with clients who otherwise would have felt "too small." What was once a sense of obligation to help a small business, is now a vibrant community of local businesses. The free help nights mean less of my time is wasted going to and from meetings and sending out invoices.

I no longer get phone calls with, "just one little question" which the client feels should be answered for free. Clients know that only help night is free. We've established the rules. They are delighted to get free tech support when it is convenient for me, and I am able to pursue larger clients.

As our businesses continue to change and grow in the digital age we must not forget our physical communities. Free help nights enable businesses to dream bigger and open source technologies allow businesses with limited budgets to explore these dreams. The free help nights have transformed my too-small clients into a source of additional income. Now is the time to look back into your own community, to think creatively and to see the potential of your own free help night.

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*"A leader is someone who steps back from the entire system and tries to build a more collaborative, more innovative system that will work over the long term."*

Robert Reich

Many open source projects start with a single developer trying to scratch an itch by making a new tool for their own use. But what if the need to be addressed is bigger, and affects more people? How can the creation of open source software involve a whole community?

At the start of 2008 I decided to build a solution to an ongoing problem in my hometown of Portland, Oregon. Portland's growing technology scene was having trouble tracking all of the user groups, meetups, and events that people were planning. I started a central calendar using Google Calendar, but found it hard to maintain. People planning the events needed the ability to make their own updates without me having to add them individually as users. A single, central information source that would be completely open to the community at large was needed. The solution became an open-source calendar aggregator called Calagator (http://calagator.org/). The process of creating that solution became a very rewarding community-building effort.

By trying different things along the way, we learned how to organize an open source project to encourage community development, used code sprint practices for group work sessions, and worked with a number of tools to make collaboration easier.

## Have a Unique Goal

The first step to any successful community project is to define a goal that clearly summarizes to other people what you're trying to accomplish.

Create a description that can be condensed into a short statement. Calagator's goal is "to build a calendar that is collaboratively edited like a wiki".

When talking to people about a new project, a common question will be "why not use something that's already out there?" While some people might be drawn in by the ability to create something shiny and new, most want assurance that a new project is necessary. When recruiting people to help, a new project is competing against all of the other existing projects. Possible contributors want to be sure they aren't wasting their time duplicating an existing solution.

## What Resources Will You Need?

Open source projects have a number of free project hosting options to choose from, such as Google Code (http://code.google.com), GitHub (http://github.com) and SourceForge (http://sourceforge.com). All three offer a source code repository, wiki, and bug tracking. Other kinds of hosting, such as that needed for a web application, are affordable and can often be donated by a hosting company or fellow developer. Given this, the biggest need for any new project is finding people to contribute and determining what contributions are needed. Contributions may involve code, user interface design, documentation, the project web page, or finding space to meet. Contributors should be enthusiastic about solving the problem that has been defined.

In my initial group-building attempts, I reached out to user group leaders, the people who had been updating the existing Google Calendar, developers I knew, as well as people with other skills I considered helpful. CubeSpace (http://cubespacepdx.com/), a coworking space in Portland, donated a meeting room for code sprints.

I made a point of talking to people one-on-one, inviting them directly to join the mailing list and come to a code sprint. Some only attended one or two meetings to talk about what they'd like to see in a new calendar, while others continued to help over a period of several months. When seeking contributions, invite more people than you think you'll need. Not everyone will have a large amount of time to contribute, but you can always find ways for everyone to help.

**Do the Simplest Thing That Could Possibly Work**

Starting simple makes it possible to have immediate success. We chose to write Calagator in Ruby on Rails (http://en.wikipedia.org/wiki/Ruby_on_rails), a framework that can create the initial functionality quickly. This choice allowed other experienced Rails developers to participate, guaranteeing that others could help write code from the start. We picked a very small initial feature set consisting of a pair of web forms for creating new events and new venues. At the end of the first code sprint, there was a working web application, deployed to a donated server account, and a Wordpress.com hosted blog for telling people what we were doing. Having something to show publicly at the end of the first day helped build the interest and momentum needed to extend functionality through future code sprints.

Why did we focus on development through code sprint meetings? The problem we wanted to solve was centered on a specific geographic area, so it made sense to invite people to talk in person about what we would build. But it was important that we didn't just sit around and talk, so we borrowed agile development techniques (http://en.wikipedia.org/wiki/Agile_software_development) for doing a single-day code sprint.

We started by writing ideas on index cards, and sorting them into development, documentation, and research tasks. People broke off into 2-3 person groups to tackle a single card for 45 minutes. The host made sure everyone had a partner and a card in order to keep all participants actively involved. At the end of 45 minutes, everyone regrouped to discuss what we had accomplished or learned, and took a short break before starting the next mini-iteration.

This strategy proved effective for keeping people interested and engaged, even with a dozen people with different types of skills. The host role is crucial: the more people involved, the more important it is to have someone in charge of the process. If you aren't comfortable doing this yourself, recruit someone. The host should be outgoing enough to talk to people about what they're interested in working on, offer them tasks to take on, and make sure each part fits into the bigger project goal.

Another agile technique we used was test-driven development (TDD, http://en.wikipedia.org/wiki/Test-driven_development). TDD uses short development iterations to produce code that meets a pre-defined improvement or new functionality. TDD ensures confidence in each incremental addition to the code base. It also provides an opportunity for mentoring, by allowing a less experienced member of a programming pair to describe what functionality needs to be tested and built, while their partner directs the code needed to make it work. The tests help developers to understand functionality written by others as well as code they haven't worked on in a while.

Having this kind of reliable code base and stable software increases credibility to less technical community members.

As a programmer, it can be easy to get caught up in the details of the implementation. Everyone else tends to only see whether or not the product works. The more reliable the product, the more a project is viewed as successful and the more others want to be involved.

As Calagator development continued over several months, tools and structure were added to keep everything working smoothly. The first piece of infrastructure was a mailing list which was created before the project even had a proper name. The mailing list was used to invite people to join the planning discussion online. After every code sprint, an update is sent to the mailing list so that people who can't attend can still follow the work.

On the day of the first code sprint, Google Code (http://code.google.com/) was used to host the project code in a public repository. Google Code also provided a wiki to keep track of documentation and useful information as well as a simple issue tracker. It is important to provide a way for people who don't write code to report problems they encounter, and receive a response. End users should be considered as contributors to your project. They will be motivated to help if they see a friendly response, including patches or documentation that show their comments are having a useful effect on the project.

Later that day we created a blog; you can see the first post at http://calagator.word press.com/2008/01/19/hello-world. While just a quick introduction, it gave us a link to send to people who wanted to know what we were up to and how they might help. The blog provides an access point for people who aren't involved enough to track the project on the mailing list.

We also use the blog to talk about the big picture: How does Calagator fit into other open source efforts? What does a calendar aggregator do?

**Keeping it Going**

Over time, a project's needs will change. Keep it simple: wait until a problem needs to be solved to address it. In our case, we had initially debated whether to use Subversion (http://subversion.tigris.org/) or Git (http://git-scm.com/) for version control. We started on Subversion because it was familiar to more people and we needed to make it easy for people to contribute to the project. Toward the end of the first year, we realized that our needs had shifted. We now needed a way to better manage patches from different contributors and to make it easy for people to submit code outside of a code sprint. We switched to Git and wrote a guide for new contributors on how to submit a patch (http://code.google.com/p/calagator/wiki/HowToSubmitAPatch).

Being open to new participants is an important part of keeping a project alive. People may drift in and out as they have more or less time to contribute. A project's core development team should not turn into a closed group that other people find difficult to interact with. For Calagator's first birthday, we had a code sprint that focused on showing people how they could contribute to the project and introduced them to the types of issues we were currently working on. Something similar can be achieved through blog posts and screencasts if in-person meetings aren't possible. Even if developers live in different places, consider meeting at a conference once or twice a year to let everyone hang out, chat, and show off what they are doing.

We've kept the structure of Calagator's supporting group informal, collaborative, and welcoming. Decision making happens through a discussion and consensus process: there is no dictator, benevolent or otherwise. These practices have been crucial for maintaining community goodwill, and making it a fun project to be a part of. New participants don't want to fight their way in. They need mentoring and support.

Building anything from scratch is an act to be proud of, and doubly so if it turns into a community effort. Encourage your community to take time to step back and enjoy their work. Community-built software requires equal parts technical and social contribution. The reward is not just a piece of useful software, but the social connections made, and the benefit to the community the software serves. Technology is created for people, to solve real human needs, and community-built software provides an opportunity to put that idea to work.

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*"Foundations offer a way to make open-source development more corporate (organized in such a way that commercial vendors can participate with fewer reservations) without becoming commercial, a turn-off for many would-be code contributors."*

Matt Asay

http://tinyurl.com/q8gsx6

As open source projects mature, they tend to join or create a foundation to manage the project's financial and software assets, provide a marketing and legal entity, and  help to set the direction of the project. As non-profit organizations, foundations have a specific structure defined by the jurisdiction in which they were formed. This structure typically includes a volunteer board of directors and sometimes paid staff such as a secretary or executive director.

As Executive Director of the GNOME Foundation (http://www.gnome.org), I am often asked "what do you do?". This article will introduce the structure of the GNOME project and its Foundation, describe how the Foundation works to support the GNOME project, and discuss the roles of the people within the GNOME Foundation.

## GNOME Structure

The GNOME project started out as an open source desktop. It has evolved into a complete, free and easy-to-use desktop environment which includes software for tasks like playing music, editing images, and working with documents. GNOME also provides a powerful application development framework for  both desktop and mobile application developers. As part of the GNU Project (http://gnu.org), GNOME is  free to use, modify, and distribute.

The GNOME Foundation exists to support the GNOME project's mission of creating a free and open source desktop accessible to all people regardless of their ability to pay, physical ability, or the language they speak. The Foundation acts as the official voice of the GNOME project, communicating with press and other other organizations, coordinating releases of GNOME, determining which projects are part of GNOME, and planning events that support GNOME and its developers.

The GNOME Foundation is a US-based 501(c)(3) non-profit organization with an elected Board of Directors, an appointed Board of Advisors, approximately 400 members, and two paid staff. The 400 members are all contributors to GNOME. A contributor is anyone who has made a significant contribution such as code, organizing a conference, writing documentation, or translating GNOME into other languages. GNOME contributors must renew their membership every two years.

## The GNOME Foundation

The GNOME project is mostly self-managed by informally structured teams. The GNOME Foundation serves as the support or steward of the project. Any GNOME contributor can apply to the Foundation for membership. All members, 370 at current count, can vote. Typically there is one vote per year by the membership to see who serves on the Board of Directors. The Board of Directors is then authorized to make decisions on behalf of the entire body of GNOME Foundation members. The Board runs the Foundation's day-to-day business, voting internally on financial decisions, legal issues and general policy. The Board of Directors is also authorized to hire staff that reports to them.

In addition to the membership, the Board of Directors and the Foundation staff, the GNOME Foundation also has a Board of Advisors.

The Board of Advisors is a group of representatives from companies and non-profit organizations that work closely with GNOME. Many donate annually to the GNOME project and provide sponsorship for hiring staff, hackfests, events, and outreach programs.

**GNOME Teams**

While the GNOME project doesn't provide an organizational chart, the project is definitely well organized. The project is run by contributors, loosely coupled into teams. Teams are informal and tend to be grouped around either projects, such as GTK+ or GStreamer, or around tasks like marketing, maintaining the website or providing system administration support. Teams meet in IRC and hold discussions on mailing lists. Each team often has its own wiki and web pages to use for collaboration.

There are teams that write code for each of the technologies in GNOME. Translation team members ensure that GNOME is available to people around the world in their native language from Tamil to Vietnamese to Finnish.

Many contributors begin their involvement by participating in the bug squad team, which tracks incoming bugs and ensures that major bugs get addressed quickly. Some dedicated hackers work on the release team, which makes sure a new release of GNOME goes out every six months. The release team decides which features will be included in the next release, works carefully with all of the projects to ensure their product is ready and tested, writes release notes, and keeps everyone moving towards the mutual goal of an on-time six month release cycle.

The accessibility team is one of GNOME's core strengths. This team makes sure that GNOME is easy to use by people with accessibility needs while supporting GNOME's core value to be accessible to all, regardless of physical ability or ability to pay. GNOME's accessibility solutions cost a fraction of the cost of its non-open source competitors. When speaking of cost, GNOME software is free, but hardware sometimes needs to be purchased.

While we usually focus on people working on the project directly, the community also includes the companies and developers using GNOME technologies in their product solutions. GNOME technologies can be found in traditional desktops, mobile phones, breast cancer scanners, and GPS devices. Some of these companies sponsor the GNOME Foundation, http://foundation.gnome.org. Others participate in GNOME Mobile (http://tinyurl.com/onzu3z) and still others sponsor GNOME events (http://tinyurl.com/phgxpy).

A small group of GNOME contributors runs the membership committee, verifying that all members are GNOME contributors. On the infrastructure team, people with system administration skills keep the GNOME infrastructure running, fixing all sorts of issues in their spare time. Most of the hosting and infrastructure is donated to the GNOME Foundation by supporting companies such as Red Hat.

There are others who spend evenings and weekends discussing how the website could best be redesigned to recruit more developers and enable more people to begin using GNOME. Others volunteer to set up and staff the GNOME booth at a conference. Those with artistic talent create artwork including logos, brochures, and tshirts. Some contributors, both those with marketing talent and those with a strong desire to learn more about

marketing, write and design brochures for potential sponsors. Some volunteers organize major GNOME events like GUADEC (http://tinyurl.com/q59kh7) or GNOME.Asia. Many users are happy to answer questions for the person sitting next to them at the coffee shop.

**Role of Board and Executive Director**

In addition to all of the people working directly on GNOME, seven contributors each year are elected to serve on the Board of Directors. The Board itself does not make technical decisions, although many of the Directors also hold technical leadership roles. Rather, the Board is responsible for the stewardship of GNOME's finances, trademark, press relations, staff, and legal issues. Board members ensure that the GNOME project is successful by organizing annual get-togethers from GUADEC to hackfests. They maintain relationships with corporate partners through the advisory board. The Board solicits corporate sponsorship and individual support, and prepares and manages the budget.

While the Board of Directors doesn't make technical decisions, the Board is elected by the community to represent the project and Board members often get asked by members of the GNOME community for advice and direction. The Board of Directors in turn hires the staff they see as necessary to run the GNOME Foundation effectively and in a way that supports all of GNOME. We've had an administrative assistant, Rosanna Yuen, for several years. She maintains the financial books, invoices corporate sponsors, reimburses community members for sponsored travel, sends out Friends of GNOME gifts and generally keeps things running day-to-day.

Last year the board hired an Executive Director to help grow the Foundation. The Executive Director is expected to be

the "eyes and ears of the GNOME Foundation." Many people approach me and say they are so glad there is an Executive Director as now they know who to ask a particular question about GNOME. I respond by connecting them to the right person in the project. It still surprises me when companies that use GNOME technologies have no idea when they do or do not understand what GNOME actually is. I assume it's because open source tends to be introduced into corporations from the bottom up. In these cases, I educate management and help them understand how working more closely with the GNOME community can help them.

As Executive Director, I assist in marketing by making sure the project is reaching out to the right people. Other job duties include:

• **fundraising:** for staff salaries, specific outreach projects, travel costs to bring developers together at conferences and hackfests, and a future paid system administrator

• **business development:** finding new ways to make money as well as bringing in companies that aren't traditionally seen as being part of the GNOME community

• **general housekeeping:** ensure projects are carried through to completion, potential business deals are followed up, and meeting companies interested in working with GNOME

One of the vital things I do that doesn't cost anything is saying "that's a good idea". GNOME has a great community of talented and motivated individuals. Often they bring an idea to me or to the Board and they just need confirmation or an introduction to the right person to start their plans.

## How does GNOME Make Money?

A commonly asked question is "how does the GNOME project make money?". The GNOME Foundation is supported financially by donations. Donations come in several forms which include:

• regular donations from individuals who pledge $10/month to the GNOME Foundation through Friends of GNOME (http://www.gnome.org/friends)

• one time donations from individuals or companies through Friends of GNOME

• companies who pledge to support the GNOME Foundation with $10,000/year

• companies that hire people to work on GNOME projects

• companies that sponsor events like GUADEC, GNOME.Asia and hackfests

This financial support has given GNOME the ability to grow as a project. Being able to get most of the community together at our annual GUADEC conference as well as holding smaller local events and hackfests has enabled the community to work closely together, creating desktop technologies that adhere to strong values like freedom, internationalization, usability and accessibility.

## What Will GNOME do Next?

GNOME 3.0 discussions are well under way with a preliminary roadmap outlining new technologies and user interfaces. GNOME's challenge for the next couple of years will be figuring out what the "desktop" means to users who have a traditional computer, a netbook or a smartphone. GNOME is actively working on the best technologies and user interfaces to help users navigate these technologies.

The GNOME Foundation will support GNOME 3.0's evolution by getting feedback from the community and sponsor companies, continuing to release GNOME every six months, and working out a plan to deprecate old code and provide an appropriate migration path for partners and users.

In addition to working with our existing community and partners, the Foundation will continue to grow. We'll add new corporate sponsors, perhaps companies focused on mobile technology, chip design, netbook manufacture, and telecommunications carriers. We'll add new community members, including developers and volunteers that work on planning new events and growing existing ones. We'll see new teams in countries like Nigeria that are busy translating GNOME into local languages.

The desktop will continue to evolve as people work and interact with technology. We'll see more devices from desktops to smartphones, more people in developing countries beginning to use technology and technology adapting to meet their needs. The GNOME project will continue to work to make a free desktop available to everyone regardless of their physical ability, financial status or the language they speak. Come join us!

*Stormy Peters is Executive Director of the GNOME Foundation, a 501(c)3 non-profit which works to further the goals of the GNOME Project. She has established relationships with the open source community and industry sponsors. Stormy has been involved with the GNOME Foundation, having been one of the founding members of the GNOME Foundation Advisory Board in 2000. Her previous positions include that of Open Source Program Manager at Hewlett-Packard and Director of Community and partner programs at OpenLogic. Stormy graduated from Rice University with a B.A. in Computer Science.*

*"The greater the obstacle, the more glory in overcoming it."*

Moliere

Currently, proprietary businesses dominate the operating systems market. In 2008, Microsoft Windows controlled 87.9% of the market with Mac OS X following up with 9.73%, leaving only 2.37% of the market to open source alternatives (http://marketshare.hitslink.com/os-market-share.aspx?qprid=9). However, in the past year alone, Linux market share has grown from .80% to 1.02% (a 27.5% increase) and other open source operating systems have grown from .22% to .58% (a 163% increase). These figures translate into millions of open source operating system users. The question is how to continue these upward trends and break the stranglehold that proprietary operating systems have on the markets. This article discusses the role that open source advocacy plays in increasing open source usage.

**Chipping Away at Market Share**

One of the main goals of open source advocacy is to break down the barriers that proprietary businesses have placed in the market. Cracks are already forming in these market foundations. Programs like Firefox have demonstrated to the world that open source does not mean low quality. Over the course of the past 5 years, Firefox has chipped away at the Windows browser stronghold, with Internet Explorer's dominance holding 47% of the browser market in April of 2009 (http://www.w3schools.com/browsers/browsers_stats.asp), up from 7.2% in its former form Mozilla (a 563% increase), while Internet Explorer declined from 84.9% to 42.1% (a 50.4% decline). Firefox did so through simplicity of design, solid programming and clever marketing.

Coupled with a strong user-base and community driven support, it adapted to the needs of computer users in a way that proprietary software failed to do.

Firefox is the greatest example of open source success to date, and there are other projects who have made headway against proprietary applications. GIMP (http://www.gimp.org), is an open source alternative to Adobe's Photoshop. The GIMP graphic editor has a strong user base, flexible plugins, and community based documentation and tutorials. OpenOffice (http://www.openoffice.org), sponsored in part by Sun Microsystems, has made some serious headway against its pricey proprietary counterpart, Microsoft Office. Ubuntu (http://ubuntu.com), a community developed, Linux-based operating system, has shown that open source operating systems are accessible to the average user. Ubuntu has helped to push the Linux market share to 1.06%, a record high. Use of the Windows operating system has declined to below 88% for the first time. The opportunity for other open source operating systems, such as the BSD family of operating systems (http://en.wikipedia.org/wiki/Bsd), exists. The iron is hot and it is time to strike.

Proprietary operating systems like Windows and OS X still have a solid hold on the market. Missteps such as Microsoft's release of Vista without complete driver support for commonly used non-legacy hardware has shown common users more of the technical side of computers. It has become less foreign of a concept to them, and they are starting to understand that there are alternatives. Ubuntu's success is a shining example that open source alternatives exist. However, with open source, there are market barriers to be overcome.

Recognizing barriers for proprietary software and capitalizing on them, while acknowledging the challenges for open source, provides a 2-fold way of meeting the demand of the user base and overcoming the obstacles to success.

**Overcoming Barriers**

One barrier is name recognition. Ubuntu and a few other Linux distros, such as RedHat and SUSE, have broken this barrier. Many other open source operating systems have not. We present BSD as an example of a mature, open source operating system that can readily meet the technical needs of a desktop user but which has not yet achieved recognition of market share. For example, the following questions don't have ready answers to the general computing public: "What is BSD? Who uses BSD? Why should the average user even care about BSD?"

In order to reach a broader audience, guerrilla marketing, social networking, blogger support, message boards, and print media should all be considered in getting the BSD name out there. Spreading the message and linking to a centralized repository of information helps to educate and influence executives, information technology management, and the average user. Community involvement is the common thread in open source success stories, and the BSD community is already strong and connected. Being friendlier, warmer and more accommodating to the newest users help with:

• user retention

• increased BSD proselytizing

• creating a larger user base to generate greater word of mouth advertising

A second barrier is helping non-technical users transition by enabling them to install, configure and use BSD without overwhelming them with details that aren't relevant to their needs. This can be accomplished through easy to understand documentation and a friendly community based support system for people who are new to both BSD and open source in general. Many seasoned users could use the reminder that everyone was new at one point and that they are effectively ambassadors of BSD. Keeping this in mind when encountering novice users helps them feel more welcome which, in turn, increases the user base and benefits the community at large. Offhand comments in mediums such as IRC channels and user forums can make new users afraid to ask questions, which is a detriment to the community as a whole. Helping with simple troubleshooting issues for new users should be considered a service to the entire BSD community, rather than an annoyance or hindrance. Social networking should not be something that worries users, it should be something that comes as a second nature. The more intimidating it is to adopt a new operating system, the less likely it is to be done. In this regard, Linux distributions such as Ubuntu have catered to the needs of the novice user. This has resulted in an increased adoption rate.

A third barrier is application and driver support. Hardware companies have a proprietary interest in protecting their intellectual property. Due to the permissiveness of the BSD license (http://www.open source.org/licenses/bsd-license.php),
BSD is in a good position to create relationships with companies that enable them to maintain confidentiality and protect their business advantages.

However, companies release drivers when user base numbers dictate a need. Increased hardware support helps increase user base numbers. This is a self-feeding cycle that needs to be encouraged. User based initiatives such as the SponsorBSD Project (http://www.sponsorBSD.org) give people the opportunity to network and connect sponsors with developers in a centralized location. This site is still in development and needs coders, designers, test sponsors and developers to make it a user-friendly and effective site.

Organizing the efforts of the BSD community will help bring resources together and break down market barriers more effectively. These activities take the time, effort and dedication of mostly volunteer workers. This organization effort will eventually pay dividends to the whole community. Currently, users have to dig around postings and articles on various forums, blogs and websites, causing a greater workload on the user. Users have a difficult time knowing where to put advertisements for development and to find user resources. Creating developer wish lists and development teams will foster a greater sense of teamwork and community.

**Conclusion**

Challenges should be considered as opportunities to better the BSD and other open source communities. The BSD community needs to accept and even welcome fair and constructive criticism. BSD advocates need to work more to meet the challenges that the community faces in making the BSD operating systems successful in attaining a significantly greater share of the marketplace.

If the BSD community can follow in the footsteps of other open source success models as well as take steps to address its specific market barriers, there is no reason to believe that the foundations of proprietary operating systems dominance cannot erode away further in the future. Eventually, these monolithic entities will just be one of many options from which computer users decide best serves their needs.

*Melanie Groves VonFange is a wife, mother, blogger, and open source advocate. She has been an insurance agent, makeup artist, and computer sciences student. Currently she can be found running a PC-BSD social networking site and a mock suburban co-housing homestead with the help of her husband, housemate, intern and 4 children.*

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**Recommended Resources**

BSD Magazine
http://www.bsdmag.org/

Daemon Forums
http://daemonforums.org/

FreeBSD Foundation
http://www.freebsdfoundation.org

NetBSD Foundation
http://www.netbsd.org/foundation/

PC-BSD Project
http://www.pcbsd.org/

*"I summoned the courage to submit a proposal to Open Source Bridge, and was accepted. A year ago, I don't think I would have imagined giving a talk at a conference."*

Maria Webster, DotFiveOne.com

Conferences are one way that women can be drawn into the free/libre and open source software (F/LOSS) ecosystem. Many different approaches are needed to increase women's participation in F/LOSS, but face-to-face interaction has proven to be a critical part of the way the technology community in Portland, Oregon has thrived. This article describes the successes of this community, and suggests how other communities could benefit from Portland's experience.

**Conferences Foster Community**

The first conference I ever attended was USENIX's LISA (http://www.usenix.org/events/byname/lisa.html) in 1997. It was held in San Diego and I was working for the Computing Center at the University of Oregon at the time. Linus Torvalds was there. Mark Burgess was presenting the automated systems management tool cfengine (http://www.cfengine.org/) for the first time. Markus Ranum, developer of the TIS Internet Firewall Toolkit, dressed up as TCP Wrappers (http://en.wikipedia.org/wiki/TCP_Wrapper) for the Halloween party. One of the first female IBM field service engineers wore a witch's pointed hat with a collection of punchcards tucked in the brim.

Many people knew each other, I was new. My friends showed me around, and made me feel welcome. I was hooked.

I thought to myself, "Conferences are amazing. I love this. These people are my people."

But, it wasn't the conference that hooked me. It was a small group of four or five people who made me feel welcome over the course of the week. They told me funny stories and gossiped about the good and the bad talks. They directed me to sessions I might be interested in, and encouraged me to talk to people who shared my interests. These friends were mentors, guides and party buddies all at the same time.

That first experience is what inspires me to create new conferences, rather than just attend existing ones. Open source citizenship involves not just contributing code back, but fostering community.

Because I am female and visibly involved in open source, people ask me what can be done to increase the number of women in our community. I have my answers ready: mentorship and inviting women individually.

I don't have a master plan, I only know what has worked for me. There are a set of circumstances that led to my involvement and Maria Webster's (http://www.blogher.com/women-tech-maria-uber geeke-webster) feeling of empowerment that she mentioned in the opening quote. We have both experienced involvement and belonging through a conference.

Through my work with user groups and conferences, I focus on what I can change about open source community when I'm offline. What we do when we're face to face is as important as what happens online.

**Offline Communication**

User groups are how I got started in contributing to open source. My first meeting was with the Perl Mongers (http://www.pm.org/).

Seeing people in person helped me feel comfortable sending messages to the mailing list in order to ask and to offer help. Submitting patches to RRDTool and CPAN modules felt more natural. Even though exposing code to the world still felt terrifying, it seemed easier once I knew a few people who had done the same thing.

Eventually, I started a group of my own for the open source database PostgreSQL (http://www.postgresql.org), incorporating both online and offline groups.

I live in Portland, Oregon where a vibrant, offline community has grown over the last few years. We have non-profits dedicated to maintaining our tech community, and individuals dedicating most of their personal time to organizing meetings. Legion of Tech (http://legionoftech.org/) was founded in 2008 by a group of 9 people, including me. Dawn Foster, Raven Zachary and Todd Kenefsky spearheaded the group to help continue the good work they'd been doing with BarCampPortland and IgnitePortland. FreeGeek (http://freegeek.org/) is dedicated to reuse and recycling of tech equipment, and providing educational resources for the public related to computers and free software. Many user groups meet in their building, and FreeGeek has it's own semi-yearly events.

There is something different about our tech communities that visitors and locals comment on: there are lots of women. Not only are the women present, they lead. Women lead and organize events like BarCamp (http://barcamp.org) and Ignite (http://ignite.oreilly.com/). Women lead hacking groups and give talks in user groups. I am co-chair of a locally organized, all-volunteer run conference called Open Source Bridge (http://opensourcebridge.org/).

We don't keep statistics for attendees at events, but informal counts suggest that BarCampPortland and Ignite Portland events have about 30% women. Typical conference speaker numbers vary from 0% to at most 30% (http://kottke.org/07/02/gender-diversity-at-web-conferences) with few conferences releasing attendee gender counts. Drupal's recent conference in Washington, DC was reported to have about about 16% women participants (http://groups.drupal.org/node/19897#comment-71201).

**How do we Manage our Groups?**

There are three factors that I have identified that sustain the Portland groups:

• personal invitations
• feeling useful
• having fun

The examples below focus on the things that tend to bring women into technical groups and what we as individuals can do to foster participation. These strategies can be used to increase a community's overall diversity.

**Personal Invitations**

My introduction to an open source community does not seem typical. Friends tell me stories of sending email to a mailing list and being flamed (http://en.wikipedia.org/wiki/Flaming_(Internet)), submitting a patch that was never applied, or attending a user group meeting for over a year without being talked to. Others tell incredible success stories: sharing an idea that immediately becomes the architecture for important software, submitting a patch that is warmly welcomed, and receiving a helpful critique that leads to a longer term code commitment.

The first time a new person encounters a conference or a F/LOSS user group, we all have the opportunity to make a lasting, positive impression. A friend once attended a user group for an entire year before any member of the group talked to her. I'm amazed she bothered to keep showing up. If it takes a year to start forming social connections, most people won't bother.

Simply sending a short, individual email, or mentioning to someone that you're glad they are back establishes a relationship. You're telling someone that you noticed they were present, and want them back. That's often all the encouragement a person needs to keep attending.

For organizations and events, Portlanders rely a lot on word-of-mouth advertising, short blog posts, and email. And when we want more women to attend an event, we just ask.

## Feeling Useful

Once a group has a regular set of attendees, leaders must share the work of organizing. This is not just to offload work, or even to ensure the longevity of an organization. Asking others to contribute builds trust and relationships between individuals.

The organization of the Open Source Bridge conference is distributed among nearly a dozen people. The first thing I did as an organizer was to ask friends to help create the conference. One by one, we created titles and job descriptions. Each person informally knew each other from events, but only two or three had really worked closely with one another before.

We haven't had a perfect track record with completing tasks. But when we don't delegate work, volunteers don't stay.

At Code-N-Splode (http://pdx.codensplo de.org/), a women-focused programming group run by Gabrielle Roth, we ask everyone to participate and to present. Nearly every member of the group has presented, and we find those same women giving talks at other groups and conferences. Participation creates a community to sustain this particular group while fostering female ambassadors who present talks elsewhere.

## Having Fun

Portland often feels like it buzzes with activity. Any night of the week, some freely available tech event is happening that everyone is welcome to attend. Few of these groups are highly structured. Most are small: from 3 to 30 people. Meetups are loosely organized, sometimes with a topic, other times not.

The most successful groups have a clearly planned social hour after the technical part of the meeting. Or the entire meeting is social, and designed for people to mingle, meet new folks and relax.

The Code-N-Splode group was designed to have presentation and socializing on equal footing. We wanted everyone to be able to participate and to have the opportunity to speak. What's evolved is a fun after-party for every meeting at a local bar.

## No Silver Bullet

There is no universal API (http://en.wiki pedia.org/wiki/Api) for the social aspects of free software. The ways people start out in F/LOSS are as varied as the personalities behind the software. However, one important thing has fostered the development of the Portland tech community: we meet with each other, regularly, in-person.

I'm having a long conversation with a friend about what we all can do to encourage women in open source. In the past, he has focused efforts on educating and encouraging young people. Through that conversation, I'm reminded that it is a huge leap of faith to say that bringing women into the community one at a time will make a difference.

Asking women to join the free software movement is a lot like asking people to come to a new conference. There's a risk that they just won't come. But you have to take chances, and maybe even fail a few times. The recipe for success is to learn from mistakes, adjust, and try again.

We don't need more women involved in F/LOSS just to have more women. Diversity is what keeps any community healthy and strong. Strategies that increase the number of women involved will inevitably lead to increases in other kinds of diversity.

In order for F/LOSS to become the default choice in software, it needs to be not just a choice by many, but the best choice. We can't achieve this goal without bringing more women into our groups. The experience of Portland's technical community can act as inspiration for change in other open source communities.

*Selena Deckelmann works for End Point Corporation and is an enthusiastic open source advocate and PostgreSQL specialist. She is User Group Liaison for the PostgreSQL Global Development Group. She is co-chair of the Open Source Bridge conference, a conference for open source citizens. In her spare time, she likes to mix drinks for her local Perl and Postgres user groups and fetch eggs from her chickens (when she has them).*

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**Recommended Resources**

Portland's Tech Event Calendar
http://calagator.org

Blog Dedicated to Portland's Tech Community
http://siliconflorist.com

A Non-Profit Dedicated to Free, Fun Events
http://legionoftech.org

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## SO ARE YOU A CONTRIBUTOR?

*"Open source is not limited to "hackers doing it for love…"*

Ted Leung
http://tinyurl.com/pwbcr9

While there are over 60 names on the list of women in open source on the Geek Feminism wiki (http://geekfeminism.wikia.com/wiki/List_of_women_in_Open_Source), there are far more than 60 women making their mark in open source. I work with talented people every day in my role as Vice President of Marketing and Developer Programs at the Linux Foundation (http://linuxfoundation.org), and see first-hand the contributions women make at the technology and business levels.

This article presents some of the techniques used by the Linux Foundation to encourage a culture of inclusion and to foster a wide variety of open source contributions.

**Types of Contributions**

The non-profit organization Women in Technology (WIT, http://www.womenintechnology.org/) reports that only 26% of employees in the computer and mathematical fields are women. We believe that this figure does not represent all of the women who contribute to make technology better. In the Linux and open source communities, women may not be employed by a traditional company included in the survey or have a job role directly labeled as a technologist. I work with a variety of women who enable technology but don't write code. While there are a lot of women writing code, it is important to look at technology contributions with a wider lens.

What constitutes a "contribution" in open source? This is a contentious topic, not just associated with gender roles.

Many associate open source contributions only with code, discounting other roles such as marketing, writing, documentation, and conference organizing. Companies are often accused of not contributing if they don't commit code, even if they provide other needed services such as branding, community building or documentation.

There is still work to do in regards to women in open source. There are conferences that still assume that a woman in attendance must be the partner of a developer. There are articles that stress that Linux is so easy to use, "even your girlfriend can use it." What should we do to combat these issues? In one word: lead.

**Culture of Inclusion**

One of my job duties at the Linux Foundation is creating and leading Linux conferences. We stress the culture of inclusion, not just to women but to cultures, including the business culture which is often foreign to developers. At the Collaboration Summit (http://events.linuxfoundation.org/events/collaboration-summit) and LinuxCon (http://events.linuxfoundation.org/events/linuxcon) we foster inclusion. When we see non-inclusive articles, we comment and tell the author and editor that the tone of their article is damaging. At the news site Linux.com, we create and lead a culture that doesn't abide discrimination or ignorance of inclusion.

Not everyone is in a position to create and lead inclusive conferences or online communities. Yet, open source is all about participation. Anyone can comment on an article or in an forum to combat discouraging or prejudiced items. By participating, you become a role model and can show women that they are not alone or under appreciated in those communities.

**Some Linux Foundation Initiatives**

We believe that non-development work throughout the Linux and open source ecosystems advances technology. A big part of my job is clearing the path to make it easier for development work and to connect people on common challenges and opportunities to drive important work forward. For example, the Linux Foundation hosts in-person and virtual forums throughout the year where people debate and surface resolutions on how to move Linux and other open source projects to the next level. This is specifically how we advance the Linux operating system to compete head-to-head with Windows. We believe in, and support, collaborative, mass development that takes place in person and online.

If you search the source for the Linux kernel, you will find my name. Not associated with code, but with a guide entitled "How to participate with the Linux community" authored by Jonathan Corbet (http://ldn.linuxfoundation.org/how-participate-linux-community). I saw a need for this guide and commissioned Jon to write it. Defining and commissioning the fulfillment of this need probably wouldn't show up in survey numbers, but it definitely represents a contribution to open source.

We are especially excited about LinuxCon because it represents a "new generation" of event, where developers and users can collaborate on technical issues as well as network to build important professional relationships. This type of conference goes beyond the tradeshow format of yesterday to provide real value for the community. All too often, open source is viewed as an "old boy's club," and not just in regard to gender. At many events, business people, marketing folks, or users who don't code aren't made to feel especially welcome.

# SO ARE YOU A CONTRIBUTOR?

There is often a hard core segregation between developers and users or business people. With Linuxcon, we describe the conference as a "big tent." We are still looking for mini-summits or speakers who would like to participate, so contact me directly if you're interested.

We see women participating in the Linux community through our newest project, Linux.com. Linux.com plans to host a "Women in Open Source" group where female colleagues can discuss and collaborate on work that is important to them.

The new Linux.com, which the Linux Foundation acquired from SourceForge earlier this year, also connects Linux users and developers. It provides a forum to collaborate on a variety of projects and topics while showcasing skills. For example, the "Ultimate Linux Guru" point system recognizes active participation and significant contributions. This will be one way that women in the Linux and open source communities can surface their involvement and represent themselves to a broader group of people.

**Invitation to Participate**

We have provided a few examples of how women can become more involved in the community through the Linux Foundation. We encourage those interested to join the Linux Foundation as an individual member (http://www.linuxfoundation.org/about/join/individual) and to begin participating in our workgroups. We host a number of workgroups at the Foundation, including Moblin (http://www.moblin.org), FOSSBazaar (https://www.fossbazaar.org/) and the LSB (http://www.linuxbase.org/).

## SO ARE YOU A CONTRIBUTOR?

We invite all women participating in the Linux community, including beginners and veterans, to join our online Video Forum (http://video.linuxfoundation.org) and to meet us at our events.

*Amanda McPherson is a founding management team member of the Linux Foundation and current Vice President, Marketing and Developer Programs. She is responsible for content, web strategy, events, public relations and developer programs, including the Linux Developer Network. Highlights of her work with the Linux Foundation include: defining the initial brand and positioning of the organization, creating the Linux Foundation Collaboration Summit, and authorizing multiple content pieces, including the "Who Writes the Linux Kernel" whitepaper. She has been involved in open source for the past eight years. Amanda was director of marketing for the Free Standards Group, the certification and standardization authority for Linux. Prior to that, she was Director of Marketing for Covalent Technologies, the leading provider of Apache Web server software. Previously, she served at two of the industry's largest public relations and marketing agencies -- Cunningham Communication and Burson-Marsteller -- where her work was recognized by an industry award from the Public Relations Society of America. She was a core member of the marketing team responsible for the launch of the Java programming language in 1995. A published fiction author, Amanda graduated magna cum laude with a B.A. in English from the University of California at Berkeley, where she was a member of Phi Beta Kappa. She also holds an MFA in Creative Writing from the University of Arizona.*

**Recommended Resources**

Amanda McPherson's Blog
http://www.linux-foundation.org/weblogs/amanda/

Interview with Mitchell Baker of Mozilla
http://linux-foundation.org/weblogs/openvoices/2008/08/19/mitchellbaker

**The Commercial Open Source Business Model**

**From the Abstract:**

Commercial open source software projects are open source software projects that are owned by a single firm that derives a direct and significant revenue stream from the software. Commercial open source at first glance represents an economic paradox: How can a firm earn money if it is making its product available for free as open source? This paper presents the core properties of commercial open source business models and discusses how they work. Using a commercial open source approach, firms can get to market faster with a superior product at lower cost than possible for traditional competitors. The paper shows how these benefits accrue from an engaged and self-supporting user community. Lacking any prior comprehensive reference, this paper is based on an analysis of public statements by practitioners of commercial open source. It forges the various anecdotes into a coherent description of revenue generation strategies and relevant business functions.

http://dirkriehle.com/2009/05/01/the-commercial-open-source-business-model/

**Linux on the Desktop: Lessons from Mainstream Business Adoption**

**From the Objective of this Report:**

This report is intended to provide an objective review of where and how Linux might fit into your desktop related plans and activities moving forward. The aim is to deliver insight rather than recommendations – i.e. it is not our intention to either advocate or discourage desktop Linux adoption, just to help IT professionals understand the potential benefits, issues and practicalities so the fit can be assessed in the context of your own IT and business environment.

http://www.freeformdynamics.com/fullarticle.asp?aid=678

**May 1**

Open Access in Libraries & Cultural Resources

**Calgary, AB**

The Academic Council of Libraries and Cultural Resources at the University of Calgary has adopted a mandate to deposit their scholarly output in Dspace, the University's open access scholarly repository. The repository has been in place since March 2003 and currently provides access to a broad range of scholarly output, including a growing collection of full text university theses.

http://library.ucalgary.ca/open-access/lcr

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**May 21**

New Business Ecosystem Launched to Help Companies Commercialize the Next Generation of ICT

**Ottawa, ON**

Peter Carbone, Chair of the Board of Coral CEA, and Tony Bailetti, Director of the Ontario Talent First Network, today announced the launch of a new business ecosystem designed to assist companies to commercialize communications enabled applications (CEA). The Coral CEA ecosystem is anchored around a non-profit organization with five founding members: IBM, Nortel, Carleton University, Eclipse Foundation and The IT Association of Canada. Communication enabled applications represent the next generation of Information and Communication Technology (ICT).

http://www.coralcea.net/coral/tiki-download_wiki_attachment.php?attId=18&download=y

**May 22**

City of Vancouver Embraces Open Data, Standards and Source

**Vancouver, BC**

Vancouver city council has endorsed the principles of making its data open and accessible to everyone where possible, adopting open standards for that data and considering open source software when replacing existing applications.

http://www.cbc.ca/canada/british-columbia/story/2009/05/22/tech-vancouver-open-source-standards-software-city.html

**July 8-10**

PKP Scholarly Publishing Conference

**Vancouver, BC**

The conference will provide opportunities for those involved in the organization, promotion, and study of scholarly communication to share and discuss innovative work in scholarly publishing, with a focus on the contribution that open source publishing technologies can make to improving access to research and scholarship on a global and public scale.

http://pkp.sfu.ca/ocs/pkp/index.php/pkp2009/pkp2009

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**July 13-17**

Linux Symposium

**Montreal, QC**

The Linux development community is diverse, both culturally and geographically. Face to face meetings allow for sharing of ideas and opportunities to socialize. These meetings are critical for diverse communities to make concrete progress in a way that is sometimes not possible online.

http://www.linuxsymposium.org/2009/

**July 16-17**

International Conference on e-Learning

**Montreal, QC**

ICEL-2009 invites researchers, practitioners and academics to present their research findings, work in progress, case studies and conceptual advances in areas of work where education and technology intersect. The conference brings together varied groups of people with different perspectives, experiences and knowledge in one location. It aims to help practitioners find ways of putting research into practice and researchers to gain an understanding of real-world problems, needs and aspirations.

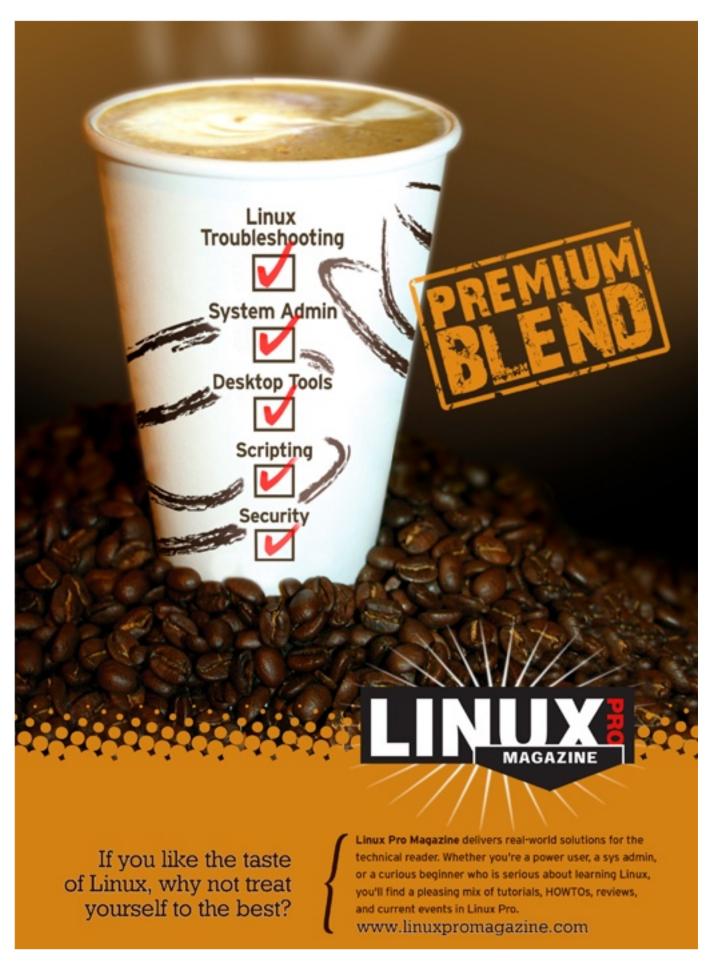http://academic-conferences.org/icel/icel2009/icel09-home.htm

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**July 27-31**

GeoWeb

**Vancouver, BC**

GeoWeb conferences focus exclusively on geographic information systems, the Internet, and the economic potential associated with their convergence. GeoWeb 2009 will continue the tradition of focusing on the reciprocal impact of the Web and Geographic Information as well as the ever-increasing need for collaboration in light of global economic and environmental concerns. Representatives from both public and private organizations are invited to meet, discuss and learn about today's most innovative geospatial technologies.

http://geowebconference.org/

The goal of the Open Source Business Resource is to provide quality and insightful content regarding the issues relevant to the development and commercialization of open source assets. We believe the best way to achieve this goal is through the contributions and feedback from experts within the business and open source communities.

OSBR readers are looking for practical ideas they can apply within their own organizations. They also appreciate a thorough exploration of the issues and emerging trends surrounding the business of open source. If you are considering contributing an article, start by asking yourself:

1. Does my research or experience provide any new insights or perspectives?

2. Do I often find myself having to explain this topic when I meet people as they are unaware of its relevance?

3. Do I believe that I could have saved myself time, money, and frustration if someone had explained to me the issues surrounding this topic?

4. Am I constantly correcting misconceptions regarding this topic?

5. Am I considered to be an expert in this field? For example, do I present my research or experience at conferences?

If your answer is "yes" to any of these questions, your topic is probably of interest to OSBR readers.

When writing your article, keep the following points in mind:

1. Thoroughly examine the topic; don't leave the reader wishing for more.

2. Know your central theme and stick to it.

3. Demonstrate your depth of understanding for the topic, and that you have considered its benefits, possible outcomes, and applicability.

4. Write in third-person formal style.

These guidelines should assist in the process of translating your expertise into a focused article which adds to the knowledgable resources available through the OSBR.

| Upcoming Editorial Themes | |
|---|---|
| **July 2009:** | Collaboration<br>Guest Editor: Stephen Huddart<br>J. W. McConnell Foundation |
| **August 2009:** | Tech Entrepreneurship |
| **September 2009:** | Business Intelligence<br>Guest Editor: Mike Andrews<br>SQLPower |

**Formatting Guidelines**:

All contributions are to be submitted in .txt or .rtf format.

Indicate if your submission has been previously published elsewhere.

Do not send articles shorter than 1500 words or longer than 3000 words.

Begin with a thought-provoking quotation that matches the spirit of the article. Research the source of your quotation in order to provide proper attribution.

Include a 2-3 paragraph abstract that provides the key messages you will be presenting in the article.

Any quotations or references within the article text need attribution. The URL to an online reference is preferred; where no online reference exists, include the name of the person and the full title of the article or book containing the referenced text. If the reference is from a personal communication, ensure that you have permission to use the quote and include a comment to that effect.

Provide a 2-3 paragraph conclusion that summarizes the article's main points and leaves the reader with the most important messages.

If this is your first article, include a 75-150 word biography.

If there are any additional texts that would be of interest to readers, include their full title and location URL.

Include 5 keywords for the article's metadata to assist search engines in finding your article.

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The Talent First Network program is funded in part by the Government of Ontario.

The Technology Innovation Management (TIM) program is a master's program for experienced engineers. It is offered by Carleton University's Department of Systems and Computer Engineering. The TIM program offers both a thesis based degree (M.A.Sc.) and a project based degree (M.Eng.). The M.Eng is offered real-time worldwide. To apply, please go to: http://www.carleton.ca/tim/sub/apply.html.