Where the Jobs Are, Free and Open Source (FOSS) Waits for You

You probably know there is a dearth of hot spots in the job market. Whether you believe it's due to the theories surrounding a current sunspot cycle slowdown or financial meltdown is up to you. You may not realize there are exceptions. Some hot spots actually exist. One of them is programming for organizations that have embraced open source software. You'll recall that open source software refers to programs for which the source code is made available for anyone to examine or use.

Each day I get a Google alert about Lucene and Solr. A typical message reads as follows:

> *Job: DevOps Engineer - Chef, Rails, MySQL, Solr, Redis – Goldstar Management and Monitoring of NoSQL DBs (Redis), message queues, search indexes (Solr), daemons and email servers. * Capacity Planning ... http://jobs.37signals.com/jobs/9124*

Does this job description make sense to you? I wanted to determine if a "regular" person could figure out what the employer required. I showed it to my neighbor, a former business development manager for a healthcare company who is currently working as a "business consultant" while looking for a full-time job with benefits. He read the ad and asked, "What is this job? A joke?"

Nope, no joke. The open source boom has created an unprecedented demand for developers, engineers, and coders who can work with Lucene/Solr, Drupal, Hadoop, and dozens of other free and open source software (FOSS) swap outs for brand name enterprise solutions. This boom is not limited to the corporate world—nonprofits and libraries are embracing open source as well, both technologically and philosophically.

YOU'VE GOT ISSUES

The Wikipedia (http://en.wikipedia.org/wiki/Open-source_software) entry for open source software has a bold label that states, "This article has issues." That's a clue about the potential for contention regarding open source software. Open source communities are a fascinating combination of technical brilliance, rock star programmers who make a project or chunk of code "work," and the needs of the users of the software. It can also verge on the dysfunctional. Open source does not mean unencumbered. One needs a good attorney to figure out the licensing of open source software. Even more challenging is working through the thicket of jargon and in-crowd politics that forms around a major open source project such as Lucene/Solr for search, retrieval, and content processing.

Many individuals—both technical and nontechnical—have long seen open source software as a semiclosed and exclusive club for technical insiders. In this community, rock stars emerged. Their reputations gained heft as these programmers made significant contributions to open source projects.

Open source for many people means Linux, an open source version of Unix. The Linux kernel was the brainchild of the "rock star" Linus Torvalds, a Finnish software engineer. Since Torvalds first introduced Linux in 1991, it has sparked the interest of developers and users, who adapted code from other free software projects. It continues to receive contributions from thousands of programmers, even 20 years later.

For many years, commercial software vendors dismissed open source software. Commercial vendors want to "lock

by Stephen E. Arnold

in" a customer, control the update and feature addition schedule, and build a developer ecosystem with training and certification hurdles. One company that does a great job of controlling an enterprise software ecosystem is Oracle. As you may know, Oracle (www.oracle.com) is now knee-deep in the open source world. IBM and even Microsoft are playing the open source card to win sales.

OPEN SOURCE COMMUNITY

What is an open source community? In its simplest form, the open source community consists of individuals who believe that software should be largely free of the constraints imposed on code by commercial enterprises. Proprietary software to some community members is bad. Open source software is good. "Bad" can mean that money is needed to use the software; complex licensing procedures are required before even minor changes may be made to a commercial software product; and fees, often reaching six or seven figures, must be paid to the company "owning" the software. The source code is not usually available to a licensee, which predictably is considered bad.

On the other hand, some community members see open source software as "good" because the approach is believed to be, or should be, 180 degrees opposite from the commercial software approach. Source code is available without charge. The developer does not need permission to experiment with the code—making changes, adding features, or rewriting complete subsystems if necessary. In exchange for the "freedom" open source software imparts, the developer is expected to contribute back to the community. In most cases, the payback is not in money but in code.

HIRING AND ACQUIRING

Because the community and its star power programmers create, maintain, and innovate in quite specific open source projects, commercial enterprises have been identifying, courting, and hiring high-profile developers. Some companies just acquire promising open source-centric startups for both the technology and the human assets.

The open source community is motivated by "giving back" and creating options to traditionally proprietary and expensive commercial systems. What happens when open source collides with commercial enterprises? MySQL, an open source alternative to Microsoft SQL Server, is now owned by Oracle. With the endorsement of Oracle, MySQL developers' value has been climbing. The same demand exists for open source business intelligence, search, and content management systems.

When I visualize the open source community cheek by jowl with buttoned-up IBM and Oracle professionals, I am reminded of Dean Vernon Wormer's frustration with John Belushi and his fraternity brothers of Delta Tau Chi in the movie *Animal House*. The metaphor is flawed, but it helps capture the difference between the world of the community supporting Drupal and the Oracle-certified database administrators keeping a financial institution's database trim and true.

Red Hat (www.redhat.com), an open source software company that was founded in 1993, has made remarkable strides. Its business model is to offer Linux and open source solutions plus for-fee products and services. The Red Hat business model has become the blueprint that other open source companies want to emulate. If you want to get inside the seminal Red Hat approach, you may find Digital

Enterprise's case study a good first step (http://digitalenterprise.org/cases/redhat.html).

RED HOT JOB MARKET

Now about that red hot job market for open source professionals.

Run a query on one of the technical recruitment web sites. For example, I routinely monitor job postings on Dice (www.dice.com). As I write this, jobs on offer there range from principal consultant to associate director to software engineer. Salaries range from the $60,000-per-year technical job to the rarified heights of senior management. Recently a Drupal software engineer job had a pay range of $80,000 to $120,000. A Perl engineer commanded $120,000 to $150,000. Open source consultants fetched an even higher potential salary—$120,000 to $160,000. I found similar postings on Monster (www.monster.com) and the previously mentioned 37Signals (http://jobs.37signals.com), with a number of openings for developers skilled in PHP, a popular scripting language, and Java, the go-to language for cross-platform development. At a recent open source conference, I counted five executive and technical recruiters. Brand managers of tobacco products and factory workers face a less robust demand for their skills.

The apparent shortage of technical professionals is a good news/bad news situation. For the individuals with the expertise, open source is a bright spot in an otherwise gloomy job market. For the companies and venture capitalists seeking technical talent in open source systems and programming languages, the demand is a problem. Recruitment costs and salaries for the candidates spike when there are more openings than there are capable people to fill them. More troublesome are the costs associated with project delays or missing ship dates for a product or service based on open source solutions.

PHILOSOPHICAL DIFFERENCES

Filling an open source developer job in a commercial enterprise may be further complicated because the ideal candidate may not want to work for a commercial software company. At one open source conference, a speaker referred to a large enterprise vendor as "the man" and "the suits," in a mocking, possibly derisory, tone of voice. The collision of community and commercial values can be baffling to a recruiter representing a Fortune 100 company enthralled with the financial and marketing benefits of open source software.

It muddies the waters when commercial companies try to make open source software fit into the commercial, proprietary software formula. Little wonder that Oracle, after purchasing the open source database MySQL, began formalizing its approach to open source. Oracle focused its big cannon on Google, another commercial enterprise with some easily visible open source DNA in its corporate bloodstream. Without getting caught in the weeds of the Oracle-Google litigation, the rumors of Oracle's seeking billions of dollars in damages from Google's alleged misuse of Java technology is an indication of the stakes in this particular open source game. The outcome of this particular legal matter may have some impact on open source software owned or under the custodial care of a commercial firm. What is taking place is a somewhat predictable conflict between two different sets of mores, beliefs, and cultural perceptions.

LICENSING MULTIPLE PRODUCTS

Another issue associated with FOSS is licensing. When one uses multiple open source products to build, there will be different licensing issues as well as communities with talented developers for each product.

An organization needs to have access to individuals with the knowledge of the open source community, where code is located, and how the updates and bug fixes work. Without in-house expertise, organizations may find themselves competing for talent. A "fast ramp" project may be pushed into the slow lane due to the lack of human resources available.

Furthermore, many organizations are offering products marketing with that tasty, open source goodness. Keep in mind that the cost savings in license fees may be matched or exceeded if the organization offers engineering and consulting services and the proprietary software needed to make your open source system match requirements.

SHIFTING SANDS

Finally, open source is undergoing rapid change. Individuals who once embraced the community approach to software are shifting to more traditional views of software. As a result, it may be difficult to calibrate how a particular open source project and its core developers will be moving. One example is the semi-open source approach Google is taking with Android, Google's open source mobile operating system. Google sees no logical problem with open source being semi-open. Others think "semi-open" is a nice way of saying, "mostly closed."

In his play *An Enemy of the People*, Henrik Ibsen said, "A community is like a ship; everyone ought to be prepared to take the helm." In a pool baked by Solr, handling a wind-up boat can become difficult. An error can create a problem that is expensive to explain to the chief financial officer. A sunburn may result if precautions are not taken.

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