

Oracle buys Sun: Understanding the impact on open source

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Database giant Oracle announced Monday that it will buy Sun Microsystems for \$9.50 per share—roughly \$7.4 billion. The two companies reached an agreement after an unsuccessful bid by IBM fell short at \$9.40 per share. Oracle has significantly expanded its reach over the past decade through a series of major acquisitions which include PeopleSoft, Hyperion, Siebel, and BEA. The addition of Sun to Oracle's roster will have far-reaching implications and a profound impact on the technology industry.

One area where the effects could be strongly felt is in the open source software community. Among Sun's most prized assets are some large-scale open source software projects that could see some major changes under their new ownership.

MySQL

The acquisition raises serious questions about the future of MySQL, a popular open source database system that Sun acquired last year. It's not clear if Oracle will see any incentive to continuing development of an open source alternative to its core database offerings. There are several factors, however, that would make it difficult for Oracle to kill off MySQL—and it could be profitable to continue investing in the system's advancement.

MySQL is already somewhat fragmented and there are several branches and forks that deliver enough unique value to be profitable independently. This makes it seem unlikely that any one player will be able to retain centralized control of the software or unilaterally terminate its forward progress.

Another factor is the efficacy of certain alternatives—such as PostgreSQL—which existing MySQL users could choose to adopt if MySQL ever seriously stumbled. It's clear that there is a significant market for open source database software, and it's a niche that someone will inevitably find a way to fill. This means that Oracle would gain little from killing off MySQL.

A point that a lot of commentators seem to be overlooking is Oracle's 2005 acquisition of Innobase, a company that developed a popular ACID-compliant storage engine for MySQL. Oracle sells Innobase's InnoDB product, which is dual-licensed and available under the GPL or commercial terms. Now that Oracle has MySQL, the company can offer commercial licenses for both the database and the InnoDB storage engine together.

Oracle has no means of stopping open source software from cannibalizing its proprietary database market, so the company has likely decided that it might as well profit from the trend. Oracle could also potentially view this as an opportunity to upsell some existing MySQL customers and transition them over to its proprietary products. Oracle will likely build software to facilitate a clean glide path for customers who wish to pursue such a migration. Solaris

Sun's Solaris strategy has transformed considerably over the past several years. The company released the operating system's code base under the open source CDDL license and brought in Debian founder Ian Murdock to turn the OpenSolaris project into a community-driven desktop distro. Under Oracle, some aspects of that strategy will be driven forward and others will likely be dropped.

Oracle's database software is heavily deployed on the Solaris platform, so Oracle clearly has relevant business interests in the future of Solaris. Oracle is, however, also very strongly committed to the Linux operating system. Oracle sells its own Linux support services on top of Red Hat's stack and is also as a major contributor to the Linux kernel. As a major player in both worlds, Oracle has every reason to want to encourage greater collaboration between the Linux and OpenSolaris communities. I suspect that this will lead Oracle to rethink Sun's licensing decisions for OpenSolaris.

When Sun liberated the Solaris source code, the company deliberately chose a license that would make it difficult for the code to be adapted for use in the Linux kernel. Oracle will probably dual-license the Solaris code so that it is available under the GPLv2 in addition to the CDDL. This will allow key Solaris innovations—such as ZFS and DTrace—to be ported to Linux.

Sun's OpenSolaris project aimed to boost Solaris mindshare by casting off some of the platform's cultural idiosyncrasies and providing an environment that is more familiar and accessible to Linux users. The OpenSolaris project also sought to deliver a compelling desktop user experience in the spirit of the Ubuntu Linux distribution. Oracle has good reasons to continue pursuing the former but probably has little interest in the latter.

Solaris has retained a position of importance in the data center, but it has clearly lost the mindshare war. Making Solaris more familiar to Linux users can only increase its relevance at this point. System administrators categorically want a GNU userspace and other accoutrements of a Linux environment. Oracle can put an end to some of the cruffy Solaris greybeard culture with some nice Linux coloring. This would help make Solaris feel more modern and less arcane.

Sun's quest to make Solaris a better Linux than Linux fell short because of a misplaced fixation on preserving the

platform's identity, and consequently, its anachronisms. Oracle isn't being held back by Sun's irrational need to differentiate Solaris in all of the wrong places. Oracle could make Solaris more Linux-like in the long run, but will face a lot of resistance and possibly resentment from certain corners of the Solaris ecosystem.

The OpenSolaris desktop push is probably not going to survive the acquisition. Sun invested in OpenSolaris on the desktop as a vehicle for furthering the platform's mindshare relative to Linux. Oracle probably views this as a lost cause and will see no reason to perpetuate the investment. This aspect of Sun's OpenSolaris strategy will almost definitely be left as an exercise for the community. Java

Oracle is a prominent player in the Java middleware space and is a major stakeholder in the future of the programming language. Oracle has very serious incentives to ensure that Java development continues and that the language remains competitive on the server. Sun never really had a clear strategy for monetizing Java and this was a constant source of pressure for the company. Oracle doesn't suffer the same affliction and might consequently be less inclined to try to use centralized control over Java as a means of achieving a competitive advantage over other users in a manner that is detrimental to the ecosystem around the language.

Sun's dictatorial control over the evolution of Java has been widely criticized by other stakeholders and is generally viewed as detrimental to the language's growth and adoption potential. The Java Community Process (JCP) has been a particularly thorny source of controversy and friction.

Oracle could finally democratize the JCP by making it more transparent and inclusive. Sun's overt hostility towards the Apache Software Foundation's Harmony project, which seeks to build an Apache-licensed Java SE implementation, could also finally be brought to an end.

Sun has generally exhibited a degree of paranoia about the prospect of empowering IBM and other competitors by validating a permissively licensed third-party Java implementation. Oracle is in a different position and probably recognizes that boosting collaboration around Java will boost the relevance and desirability of its own Java-based products. As such, Oracle will probably view the Harmony project as an opportunity rather than a risk.

One area of the Java ecosystem where Oracle's acquisition of Sun will create some uncertainty is in the client application space. The value of Java to Oracle is almost entirely confined to the server market, so it seems extremely unlikely that Oracle will want to follow through with Sun's efforts to restore Java's relevance in the browser with projects like JavaFX which is aimed squarely at competing with Adobe's deeply entrenched Flash framework.

Similarly, Sun's renewed push for Java on mobile devices could also potentially be viewed by Oracle as superfluous. The trend towards native toolkits and frameworks in the mobile space is making Java ME an anachronism. Java ME is really not competitive with the iPhone experience, which is what all of the mobile platform vendors are trying to imitate right now. Java's only advantage in the mobile environment is consistency between devices, which is really not so good in practice. Web widgets are probably going to displace Java ME for lightweight, cross-platform mobile applications. Ironically, the most sustainable stronghold of Java on handhelds in the long term will probably be Google's Android platform, which uses its own custom virtual machine and Harmony's class libraries. Conclusion

It's hard to predict the full extent of how Oracle's acquisition of Sun will impact the open source software industry. There are a lot of unanswered questions and there are many other projects at both Sun and Oracle—such as OpenOffice.org and Btrfs—that could be left in limbo. The transition will be difficult and there will surely be some cultural conflicts and friction. It's also pretty easy to anticipate a lot of cuts of both staff and projects as Oracle assimilates Sun.

Sun's long history with open source software includes both enthusiasm and antagonism. The company's renowned unwillingness to cede control and foster community-driven development has mired many of its projects in controversy. Sun's decision to open Java and Solaris came years too late and has resulted in a lot of missed opportunities. Despite these failings, Sun has consistently produced remarkable innovation and impressive technology. Oracle has a unique opportunity to take all of Sun's assets and help the good ones achieve their full potential. One can hope that Oracle will do this by setting a higher standard for transparency and inclusiveness.

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