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Intellectual Property Magazine

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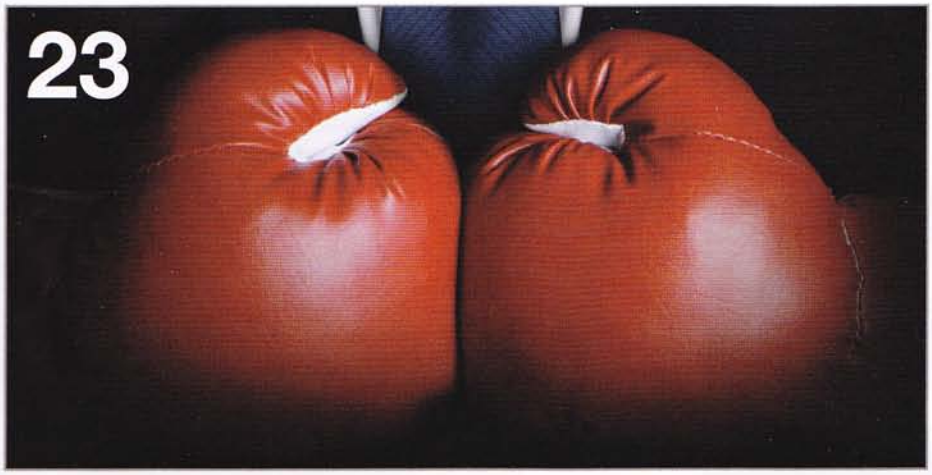

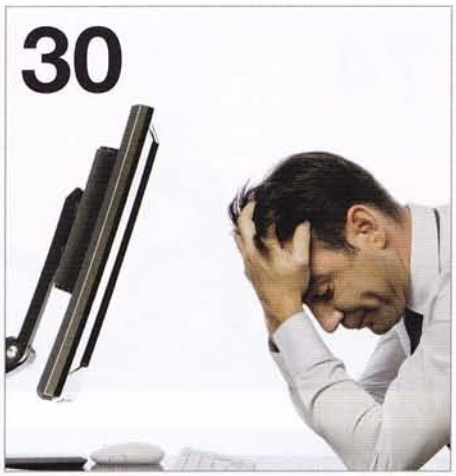

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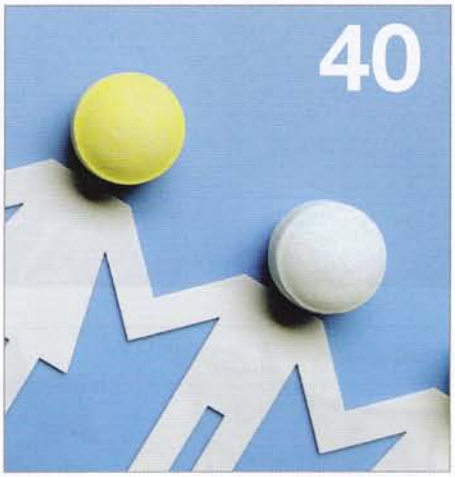

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FEATURES

Following feedback from readers, we have introduced a new way of letting you know at a glance who an article is aimed at. The graphic flags for the six groups are:

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The big guns: *Oracle v Google*, IBM, and the Java software community

Jim Farmer of immagic looks at the impact of the *Oracle v Google* case and the importance of licensing

The 12 August 2010 was a routine Thursday in the US District Court for the Northern District of California. But the two names – Oracle Corporation and Google Inc – brought Silicon Valley to a frenzy of text messages, email, telephone calls, blogs, and news media. The complaint read "Oracle America owns copyrights in the code, documentation, specifications, libraries, and other materials that comprise the Java platform."[1]

James Gosling the "inventor' of Java commented, "Oracle finally filed a patent lawsuit against Google. Not a big surprise. During the integration meetings between Sun and Oracle where we were being grilled about the patent situation between Sun and Google, we could see the Oracle lawyer's eyes sparkle. Filing patent suits was never in Sun's genetic code. Alas...."[2] Gosling was the inventor on one of the seven cited patents and was employed at Oracle until he left in April 2010.

Oracle lead attorney David Boies

One of the surprises was the lead counsel for Oracle – David Boies. Boies is not known as a patent attorney. His "star" reputation came from his cross-examination of Microsoft's Bill Gates in the US government antitrust suit against Microsoft in *United States v Microsoft Corporation*[3]. Gates entered the courtroom as the confident leader of one of the world's most successful companies. The court had seen a 50-minute video of Gates' three-day deposition. When it was played in court, it made Judge Jackson laugh[4]. Boies has a soft, slow and precise voice. When Gates answered, Boies would pause, a highlighted email conflicting with Gates testimony would show on the screens in the courtroom. Then Boies would ask Gates to explain. Soon, Gates was frequently answering "I don't recall," "I am not sure what you mean," and "I would need to know the context before answering." Gates left the witness stand appearing humbled and confused[5].

In the *New York Times*, Joel Brinkley and Steve Lohr wrote, "watching from the bench early on, the silver-haired, 63 year old Judge Jackson said he was awed by the legal prowess on display in his courtroom. 'It's exhilarating to watch,' he said. 'You'll never see better.'"[6] Observers agreed. A long line jammed the hall. Many waited hours to observe Boies' cross-examination.

In a subsequent interview, David Boies said, "One of the things I've said before is that when the Microsoft case started, neither John Warden – Microsoft's lawyer – nor Judge Jackson nor I was exactly the epitome of technological literacy. But we learned the technology together. We all worked hard at it, and it took us time. And that's what a trial's for."[7] In a brief conversation several years later I asked Boies the key to his success in this trial. He said "Relentless preparation and luck." Luck? He devastated expert witness MIT Dean Richard L Schmalensee by quoting his early work conflicting with his testimony. "I couldn't imagine the defence attorneys would not have read everything he wrote."

"There are business models that attempt to balance the needs to reward an inventor and support subsequent innovation. These need to be better understood and supported as an alternative to litigation."

Motivation for litigation

There are two reasonable speculations why Oracle would initiate this litigation. The complaint focused narrowly on the use of Java in Google's "Android [Smartphone] (including without limitation the Dalvik VM [virtual machine] and the Android software development kit) and devices that operate Android infringe one or more claims of each of United States' Patents." The patents and copyrights were acquired from the 27 January, 2010 acquisition of Sun Microsystems[8].

First, if Oracle wins and Google licences Java, this could be substantial licence revenue for Oracle. "[On] an average 184,000 Android Smartphone are sold per day."[9] By comparison, Apple sold an average 127,000 iOS Smartphones a day. The average price of a Smartphone in the US is US$208[10]. (Unsubsidised Smartphones, typical in Europe, are US$431.49)[11], a daily revenue of US$38,272,000. If this rate continues – is is expected to increase sharply – the annual revenue would be $67 billion; a licence fee of 1% would be $670 million.

If Oracle wins and a licence fee is determined, it may be tempting for Oracle to monetise other Oracle patents and extend licensing to other users.

Second, Google could be "forking" Java, a "work around" for the Java patents. Microsoft Corporation attempted to make a Java Virtual Machine [JVM] that extended the language so Java programmes that would work on personal computers with the Windows operating system, would not work on computers with other operating systems. Sun Microsystems initiated their suit against Microsoft in October 1997.[12] "This is an action against defendant Microsoft Corporation for trademark infringement, false advertising, breach of contract, unfair competition, interference with prospective economic advantage, and inducing breach of contract." At this point Sun Microsystems did not yet have Java patents that would serve as the basis for patent infringement.

The litigation ended in a 20 January, 2001 settlement[13]. "To settle the pending litigation, Microsoft agrees that the TLDA [Technology License and Development Agreement] is terminated but the parties agree that Microsoft's consent is not an admission of any breach of the TLDA by Microsoft, any wrongdoing by Microsoft or the existence of any liability of Microsoft to Sun." Microsoft paid US$ 20 million to Sun Microsystems. "Sun grants to Microsoft: A limited licence under Sun's Intellectual Property Rights, during the period ending 2 January 2008, to continue to distribute without modification in currently shipping commercial products" with pages of detailed terms and conditions.

In the original compliant, Sun Microsystems provided its rationale, "One of the principal goals of the computer industry has been to achieve a universal application programming environment whereby different computers would conveniently interact with one another over electronic networks. In seeking to fulfil this goal, however, the computer industry has long been stymied by the widespread proliferation of different operating systems which in conjunction with a variety of microprocessor architectures, are incompatible with one another." The Android code would likely not be fully compatible with Java ME which means there would be two versions of "Smartphone applications" based on Java technology.

In his "Finding of Facts" Judge Penfield Jackson wrote,

> The term "Java" refers to four interlocking elements. First, there is a Java programming language with which developers can write applications. Second, there is a set of programs written in Java that expose APIs [application programming interface] on which developers writing in Java can rely. These programs are called the "Java class libraries." The third element is the Java compiler, which translates the code written by the developer into Java "bytecode." Finally, there are programs called "Java virtual machines," or "JVMs," which translate Java bytecode into instructions comprehensible to the underlying operating system. If the Java class libraries and a JVM are present on a PC system, the system is said to carry a "Java runtime environment."[14]

Google had developed a "clean room" version of the Java virtual machine, called the "Dalvik" virtual machine (VM). The phrase "clean room" means none of the computer programmers had ever seen any of the source code for the Java virtual machine.

Oracle's complaint says, "The Android operating system software 'stack' consists of Java applications running on a Java-based object-oriented application framework, and core libraries running on a "Dalvik" VM that features just-in-time (JIT) compilation. Google actively distributes Android (including without limitation the Dalvik VM and the Android software development kit) and promotes its use by manufacturers of products and applications."

Because Sun intended Java to be "controlled" open source, the cited patents refer to methods rather than Java itself and some code may have been included in the source code subject to copyright. Sun also wanted to prevent contributors from having an ownership claim to Java.

An alternative

While many viewed *Oracle v Google* as a courtroom encounter, there are other factors that may dictate an immediate resolution.

Major software companies depend upon the Java language; it is popular. The Tiobe Programming Community Index for March 2011 suggests 19.7% of "skilled engineers worldwide" use Java[15]. IBM has strongly supported Java. Oracle competitor SAP's current development platform NetWeaver now supports both ABAP, SAP's original proprietary computer language, and now Java.

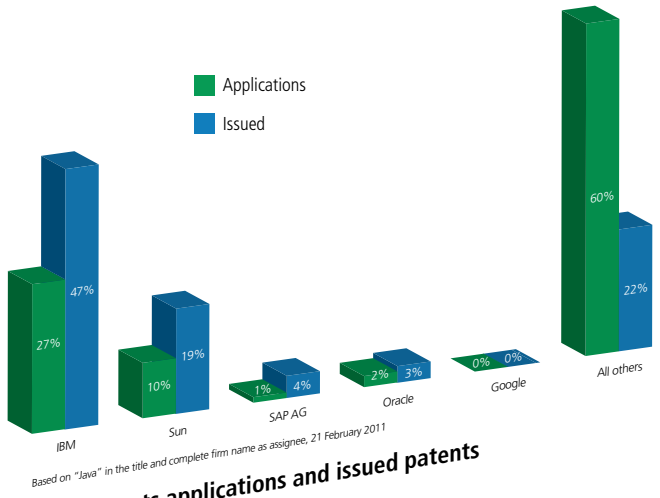
The US Bureau of Labor Statistics estimates the Java programming effort in 2009 included an estimated 72,470 computer programmers with an average wage of US$74,690 earning US$ 5.4 billion. Java programming is a big business; retraining to use another programming language in the US is estimated to cost US$ 11 billion.

Oracle also acquired the Open Office project. Sun had started the project as an open source alternative to the Microsoft Office software suite. Sun offered two versions: A supported "Star Office" and the unsupported Open Office. On 28 September 2010 many Open Office developers left the project and started a new organisation for their version called "Libre

Office." There was immediate financial support for this effort from Red Hat, Novell, Canonical and Google. This should alert Oracle management of the vulnerability of their other open source projects.

On 11 October 2010 in a terse press release Oracle announced an agreement with IBM "confirming" Oracle's commitment to open-source Java programming language – the Java Community Process – and the Open JVM used by computer manufacturers[16]. IBM is reported to have shifted 22 software engineers from the Apache Harmony open-source Java virtual machine development to Oracle's OpenJVM.

This signalled to the software industry that Java can remain the most popular language for business software. Why IBM? IBM holds approximately 47% of Java patents and 27% of pending applications as compared to Oracle and Sun Microsystems' combined 22% of patents and 12% of applications. (See Figure 1 below). Based on patents IBM has more ability to prevent Oracle's use of Java than Oracle preventing IBM.



Java patents applications and issued patents

This is not the first time that a major open-source project was threatened by patents and applications. The Linux operating system, used by an increasing number of businesses, has been affected by similar suits. IBM led the effort creating the Open-Source Development Laboratory (OSDL) to support Linux development. In addition to supporting the work of Linux guru Linus Torvald, OSDL created a "patent pool" of pledges not to enforce patents of the members. In 2007 OSDL merged with the Free Standards Group to form the Linux Foundation." The Linux Foundation is supported by 77 corporations. IBM, Oracle, Intel, Google and Sun Microsystems are contributors.

IBM has historically been a leader in collaborative development. The Apache project began as a reference implementation that web developers could use to verify compliance with the hyper-text transfer protocol [http] specification. IBM's legal team spent one year tracing down all of the contributors to the http server and documenting their contribution and the contribution of their employers if paid to contribute. (Earlier research showed most software contributors to open source were doing so for an employer).

The second was establishing OSDL. The third was the founding of Open Invention Network LLC on the 10 November 2006.

"Open Invention Network® is refining the intellectual property model so that important patents are openly shared in a collaborative environment. Patents owned by Open Invention Network® are available royalty-free to any company, institution or individual that agrees not to assert its patents against the Linux System. This enables companies to make significant corporate and capital expenditure investments in Linux – helping to fuel economic growth."[17] Those requesting membership in OIN can donate patents. Others can sell patents to OIN. Novell, Philips, Red Hat, Sony and NEC soon joined OIN. Oracle also joined later.

Keith Bergelt, CEO of OIN, said one of the objectives of OIN was to protect small companies, often the source of innovation.

Trying to balance the need for licence revenue, increasing the innovative community, and protecting software developers from unproductive litigation is a difficult task. OIN's success may be due to Mr Bergelt's background: CEO of two hedge funds, Motorola's director of Technology Strategy, and, perhaps most important, a diplomat with postings at the United Nations in NYC and the American Embassy in Tokyo, Japan.

There are two lessons from this history. First, licences do matter. Some "open-source" licences are intended to control use. The licences of all software and its components should be reviewed for terms and conditions. The University of Oxford's OSS Watch project has documented the steps to be taken to avoid unexpected issues.

Second, there are business models that attempt to balance the needs to reward an inventor and support subsequent innovation. These need to be better understood and supported as an alternative to litigation. Java needs the kind of support that OIN provides to Linux.

In the past, the CEOs of Oracle, Google, and IBM have demonstrated understanding and generosity. Because of its experience perhaps IBM can lead to a quick resolution. The users of the Java language and Java-based software would likely appreciate this special effort and the pace of innovation could continue without pause.

Footnotes

1. *Oracle v Google*, 12 August 2010.
2. Gosling, James A (2010, 12 August) The shit finally hits the fan...., [Blog] Nighthawks.
3. *United States v Microsoft* [compliant], 15 July 1994.
4. Elizabeth Wasserman (1998, 17 November) CNN.
5. The author observed the cross-examination.
6. Brinkley, Joel and Steve Lohr (2000, 9 June) Retracing the Missteps in Microsoft' Defense at Its Antitrust Trial. The New York Times.
7. Heilemann, John (2000, October) David Boies: The Wired Interview. Wired Magazine.
8. Tillman, Karen (2010, 27 January) Oracle Completes Acquisition of Sun.
9. Wilcox, Joe (2011, 9 February) Gartner: Android smartphone sales surged 888.8% in 2010. Betanews.
10. Reardon, Marguerite (2008, 29 May) Smartphones increase average price of handsets. CNET News.
11. Wireless and Mobile News (2010, 28 May) Average Subsidised Smartphone Price $43.64 or $117.08 - Unsubsidised $431.49.
12. *Sun Microsystems v Microsoft Corporation*. (1997, 7 October).
13. *Sun Microsystems v Microsoft Corporation* (2001, 20 January).
14. *United States v Microsoft* "Finding of Facts" (1999, 5 November)
15. Tiobe Software (2011, March) TIOBE Programming Community Index for March 2011.
16. Ledbetter, Letty (2010, 11 October) Oracle and IBM Collaborate to Accelerate Java Innovation Through OpenJDK.
17. Open invention network. (2011, 13 March). About OIN. Retrieved from www.openinventionnetwork.com/about.php.

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