Oracle V

In one of the most keenly followed high stakes intellectual property battles of our times, the US Federal Appeal Court's ruling in May last year in **Oracle America, Inc. v. Google, Inc**, has left the computing world dismayed and worried about the long-term consequences of the decision on technology development and its commerce. The judgment has come in for much criticism with its ruling that certain elements of Oracle Corp's popular and universal Java technology are entitled for copyright protection; raising concerns not only on the fairness of the ruling and whether structure of computer software can be copyrighted, but also the extent to which protective monopolies like copyrights can be stretched in case of programs designed to be interoperable, like Java.

The judgment of the Appeals Court came in the wake of the District Court trial where Judge William Alsup ruled in 2012, that Oracle was not entitled to copyright protection for 37 packages of Java API's (Application Programming Interfaces) replicated/mimicked by Google as they were open and free for all to use. Oracle had alleged that Google had trespassed on its proprietary rights to the structure of 37 Java APIs among others. The Appeals Court however, disagreed with Judge Alsup and reversed his order holding that the "structure, sequence and organization" of an API was indeed copyrightable.

Background

The 'Oracle vs Google' feud centers on use of the 20-year-old programming language Java to Android, particularly in relation to its Application Programming Interface (API) calls. Developed for Sun Micro Systems by James Gosling in 1991, JAVA, named after Java coffee, was released in 1995 as a core component of Sun's Java platform. It offered a new programming language, a virtual machine and a set of libraries, for use as a collection of programming technologies intended to make lives easier for application developers by providing them with a means to write code, independent of the hardware it runs on. It was nicknamed "write once run anywhere" (WORA) meaning that the Java code could run on all platforms that supported it without recompiling it and can run on any Java virtual machine(JVM) regardless of computer architecture.

Google

WHAT LIES AHEAD?

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Interestingly, Sun released the program in 2006 as free and open-source software, under the terms of the GNU General Public License. In fact, Sun's vice-president then Rich Green, is claimed to have said that Sun's ideal role with regard to Java was as an "evangelist", which was completely at odds with the stance taken subsequently by the software's new owners Oracle Corp. Major web browsers soon incorporated the ability to run Java applications and applets within web pages and Java quickly became popular. Java software runs on everything from laptops to data centers, game consoles to scientific supercomputers. It is believed that 9 million developers use it, particularly for client-server-web applications, asserting its measure of popularity.

In 2005, Google purchased Android Inc mainly for mobile phones and continued developing the operating system, till they released a beta version in 2007. They declared that they would be using some Java technologies and by the year-end, they released the android software development kit (SDK) that included Google's own 'implementations' of some of the Java APIs. Google also negotiated with Sun about a possible partnership and licensing deal for Java, albeit unsuccessfully.

However, in January 2010, Oracle acquired Sun Microsystems for $7 billion and Oracle America Inc. officially became the owner of Java programming language and its licensing. Discussions for a possible licensing deal with Google took place, though failed. In August 2010, Oracle then sued Google for copyright and patent infringement of its proprietary technologies in Java, alleging that Google had improperly incorporated parts of Java into Android SDK and claimed roughly $1 billion on its copyright claims. (The total claim on the suit was for $6.1 billion).

Crux of the Issue

While the U.S. District Court for the Northern District of California, hearing the case absolved Google on patent infringement, the crux of the matter was and still remains copyright infringement and fair use. Oracle contended that

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Google infringed its copyrights in 37 Java API packages and API documentation including 8 specialized Java security packages and a routine called "range Check", by using them in the Android operating system without license.

Google admitted to copying eight of the files verbatim and the declaration sections of the other 37 Java packages, but argued that they were not guilty of 'infringement' because they had an affirmative defense under the "Fair Use Doctrine."

In order to determine API copyright infringement, it was important to first determine whether APIs fell within the ambit of copyright protection considering their functionality aspect. APIs specify how software components should communicate and work with each other. Fundamentally, they are specifications that operate as a set of functions, procedures, methods, classes or protocols that an operating system, library or service provides to support requests made by computer programs. They are not mere expressions, though they can be written in the form of a code to be used as an industry standard. The Court focused on whether verbatim copying of Oracle's code was necessary in order to access the functionality of the Java language and programming platform.

Judge Alsup, who specifically learnt Java for the purposes of this case ruled that "So long as the specific code used to implement a method is different, anyone is free under the Copyright Act to write his or her own code to carry out exactly the same function or specification of any methods used in the Java API. It does not matter that the declaration or method header lines are identical."

District Courts' Findings

- The jury found that yes, the Java API had been infringed, but could not determine if Google's 'fair use' claim was reasonable.

- The jury found that Google had copied nine sections of code called range Check, but neither the documentation nor the literal code was infringed and that there was no infringement of 8 decompiled security files that Google claimed made up the "core" of the Java operating system.

- The jury explained that it was necessary to use the 8 decompiled files verbatim, in order to access the Java language. The jury could not reach a verdict regarding fair use.

- The District Court, in addition, found that none of the elements of the 37 API files were copyrightable, but range Check and the 8 decompiled security files were copyrightable.

- The final verdict, in a nutshell, was that Google was guilty of infringement of the 8 decompiled security files, and range Check, with no affirmative defenses.

- In general, the U.S. District Court judge ruled that as applied to this case only and in this particular circumstance, the **Java APIs weren't protected by copyright**.

- The court acknowledged that the overall structure of Oracle's API packages is creative, original, and resembling a taxonomy, which could qualify for copyright ability. However, the court found that the Java API "is nevertheless a command structure, a system or method of operation — a long hierarchy of over six thousand (actually seven thousand) commands to carry out pre-assigned functions," and hence decided that the structure Oracle was claiming was not copyrightable under Section 102(b) of the US Copyright Act.

Federal Court Decision

Oracle appealed the District Court Ruling and the Federal Court of Appeals decided that the District Court was incorrect on several counts. First, the court ruled that the 37 API files were indeed copyrightable as they are expressive and "could have been written and organized in any number of ways to achieve the same functions" and since the District Court jury too had found infringement, Google was guilty of infringing 37 API files, 8 decompiled "core" files, and range Check. The unanimous Federal Circuit panel ordered further proceedings before Judge Alsup to decide whether Google's actions were protected under fair use. The FC siding with Oracle held that the code contained "protectable expression that was entitled to copyright protection" because Sun/Oracle 'exercised creativity in the selection and arrangement' of the method declarations when it created the packages and wrote the relevant declaring code." This view followed the earlier *Johnson Controls Inc., v. Wisconsin Corporation* verdict, where the Court decided that the 'structure, sequence and organization' (SSO) of computer programs is copyrightable. To summarize, the Federal Appeals Court:

- Reversed the main decision, deciding that the 37 Java APIs could indeed be copyrighted and were infringed.

- Sent the "fair use" portion of the case back to the District Court for them to make a decision this time.

- Affirmed that Google was at fault regarding those nine pieces of range Check code.

- Concluded that a set of commands to instruct a computer to carry out desired operations may contain expression eligible for copyright protection.

The Federal Court quoted Chief Justice Michael Boudin in his concurring opinion in *Lotus Development Corporation v Borland International Inc* where the High Court agreed with the Appeals Court ruling that a 'method of operation' is not copyrightable saying: *"Applying copyright law to computer programs is like assembling a jigsaw puzzle whose pieces do not quite fit."* Affirming that the examination of the jigsaw pieces was indeed a difficult task, the Court also concluded that the District Court did not properly separate the concept of copyrightability and the concept of copyright infringement.

What also went against Google were the failed negotiations it had with both Sun and Oracle with the sticking point being that Google wanted all code to be proprietary rather than compatible with the Java virtual machine or other Java programs. The court was no doubt influenced by the fact that Google had originally determined that they would need a license to use the API packages and when denied, decompiled and used them verbatim. As Google admitted to copying the declarations verbatim, Google infringed Oracle's copyright by definition.

The remaining question was whether or not that infringement was "fair use" under either the Merger Doctrine, or other interoperability arguments.

Arguments

Oracle argued that APIs are creative works of expression and repeatedly compared each Java API code to a 'novel' or the writing of any literary work, which is explicitly protected under the US Copyright Law or the Indian law for that matter. It claimed that, Google copied at least 7000 lines of original computer source code that Oracle owned, and included the copied code in its own software platform, even though Google could have written its own code to perform the same functions. The Appeals Court agreed with Oracle's contentions that the files in question consisted of two parts: 1) literal elements, as in 7000 lines of declarations in the source code, and 2) non-literal elements, being the structure, sequence, and organization of each of the 37 API packages and both literal and non-literal parts were subject to copyright.

Without claiming uniqueness of its code, Oracle pointed out that Google had saved time and money getting to market faster by using Oracle's Java APIs instead of taking the time to write its own code or using Java under a proper licensing agreement. Basically, Oracle argued against 'fair use' stating that the purpose and character of Google's incorporation of Java APIs in its Android platform was clearly commercial, affecting negatively the existing and potential market by creating unlawful market domination that hurt companies holding Java licenses.

Google countered that their use of Java falls under the protective umbrella of fair and transformative use as they had only used those parts of Java, which were Open Source, meaning which were free for the public to use, without requiring a license. Google in fact, created their own computer language 'Dalvik VM' (VM - Virtual Machine), with which they developed the Android platform and hence, there was no infringement of Oracle's copyrights in the process. Moreover, whatever code was copied was so insignificant and easy to reproduce that it added "little or no value to Android." Google invoked the doctrine *De Minimis Non Curat Lex* or the law does not concern itself with trivial matters.

Under both, the US and Indian law, fair use or fair dealing implies 'certain acts not amounting to infringement' of a copyright. In *Harper & Row Publishers, Inc Vs Nation Enterprises* (1985), the U.S. Court observed that, "fair use is a question of law and fact", while outlining the now well-known and oft quoted four standards of 'fair use'. Also, American Courts describe 'transformative use' as "where a defendant changes the plaintiff's copyrighted work or uses the plaintiff's copyrighted work in a different context, such that the plaintiff's work is transformed into a new creation." In the current case, the District Court found Google's work "highly transformative".

Conclusion

Much of the software industry was hoping the higher court would consider overturning the verdict against Google, not because there shouldn't be copyrighting in that space, but because copyrighting can negatively affect the interoperability between products and services. CCIA (Computer & Communications Industry Association) said in its amicus brief: *"Effective intellectual property protection gives developers incentive to create new applications. At the same time, improper extension of copyright law to functional elements will impede innovation and inhibit competition in the computer industry."*

After the Appeals Court ruling, the networking technology powerhouse Cisco Systems, Inc. already brought two lawsuits against Arista Networks, Inc. over Ethernet switch manufacturing and selling, claiming patent infringement in one and accusing Arista of copying proprietary computer commands and instruction manual language in the other. This is just one example of how the Appeals Court decision has already affected the marketplace.

With copyright protections lasting for long years, programmers are worried that it will stifle innovation and lead to tech monopolies. The freedom to reimplement and extend existing APIs has been the key to competition and progress both in hardware and software development, but APIs will now have to be designed to work around copyrighted works and costly licenses that could end up in friction.

In October 2014, Google petitioned the SC to hear the case and the petition for certiorari was denied by the US Supreme Court on June 29, 2015. However, the District Court's decision on 'fair use' is still awaited.

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