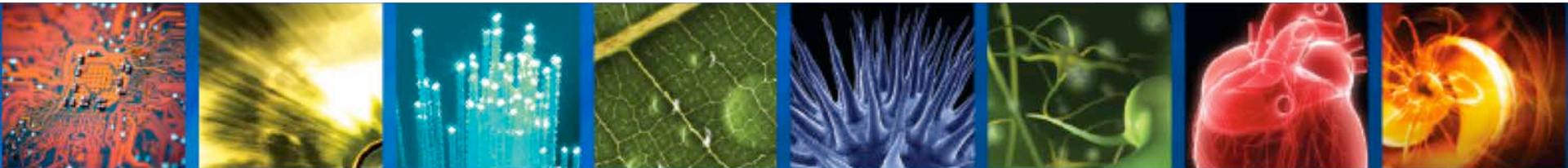


Software Copyrights in an Evolving Digital World

Workshop W2
LESI Conference
April 13, 2015



Software Copyright & Interoperability

Overview

- Software **Interoperability** and **Scope of Copyright**
- Fact Pattern: Oracle (**Java**) v Google (**Android**)
- Google Copied over 5,000 API names & Oracle's Pattern of Function Calls
- Java Programmers could then write programs on the Android platform without much additional training

Software Copyright & Interoperability

Is Google's Copying Permitted?

- “Yes Copying Okay” at District Court
- “Not Okay” at Appeals Court (Federal Circuit) –
- U.S. Supreme Court may Review

Plan for Panel Presentations

- First section – U.S. Copyright Analysis
- Next Three Sections – Panelists will discuss current software copyright issues in Europe, Singapore and Mexico

Program Language and Function Calls

Java and Function Calls (“APIs”)

- Java is a Software Language used to instruct the Computer to accomplish desired functions
- APIs, “application programming interfaces,” are pre-programmed tasks written in the Java Language
- Each API task has a name
- Oracle has created a large Library of APIs
- Java Programmers save time by calling pre-programmed code in the API library corresponding to the desired task to be performed

An Example API in Java

Example Java API

- The “Get Max” API is called by using this “name”:

`java.lang.Math.max(int a, int b)`

- When operated this method returns:

the larger of a and b.

- A software programmer “calls” this pre-programmed operation by adding a line of code to “import” the API from the Java library
- The name of the API must be correctly used in order for the task to be called in from the library

Oracles' Pattern of APIs

- Oracle's Java API library includes 166 API "packages" comprising Hundreds of classes and Thousands of methods
- The overall structure, sequence and organization ("SSO") of Oracle's Java API packages, classes, and names becomes a pattern that is known to programmers around the world.
- This pattern of API names including its structure, sequence, and organization ("SSO") was created by Oracle and its predecessor Sun Microsystems

Google's Copying

- Google copied 37 of Oracle's 166 API packages amounting to over 600 classes and a total of over 5,000 API names
- Google also copied the API library pattern including the "SSO" – the Structure, Sequence and Organization
- This permitted Java developers to quickly develop (or "port") Java applications for Android with minimal transition cost
- Google wrote its own Android implementation code for each of the 5,000 API task names that were copied
- 3% of Oracle's code from the 37 API packages was copied

Questions

Copyright Issues

- Copyrightable? Are Oracle's 5,000 API names and the API Library's structure, sequence and organization ("SSO") Protected by Copyright?
- Infringement? Is Google's copying of 5,000 API names and the API Library SSO an infringement of Oracle's copyrights?
- Defenses?
 - Fair Use? Interoperability?
 - Became a Standard?

Software Copyright Law in the United States

The Tension Regarding

Scope of Software Copyright Protection

- Computer Software programming is a Creative activity
- There are usually many ways a program can be written to accomplish the same or similar computer implemented function
- Methods of Operation However are Generally not Copyrightable

Software Copyright Law in the United States

Computer Program Defined in US Copyright Act

- Copyright protection subsists in original works of authorship . . . including . . . literary works 17 U.S.C. § 102(a)
- Computer Program(s) are expressly defined in the Statute (17 U.S.C. § 101), and generally considered to be protected by copyright as “literary works”

Software Copyright Law in the United States

US Copyright Statute – Legislative History

Computer Programs May be Copyrightable as Literary Works -

- LEGISLATIVE HISTORY. US Congress made it clear that **literary works** include “...**computer programs** to the extent that they incorporate authorship in the **programmer’s expression of original ideas, as distinguished from the ideas themselves.** [H.R. Rep. No. 94-1476 at 54] (emphasis added)

Software Copyright Law in the United States

Methods of Operation are not Copyrightable

- In no case does copyright protection for an original work of authorship extend to any idea, **procedure, process, system, method of operation**, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work. [17 U.S.C. § 102(b)] (emphasis added)

What Expression is Copyrightable

MERGER OF IDEA AND EXPRESSION

- **EXPRESSION IS COPYRIGHTABLE.** The particular way in which the computer program is written is usually copyrightable
- **FUNCTION IS NOT COPYRIGHTABLE.** Anyone is free to write their own program to implement the same function.
- **MERGER.** if there is only one way to accomplish the function then there is no copyright protection - The expression has merged with the function or “idea”

Application to Java and Android API Names

WHEN IS MERGER ASSESSED?

- **At the Time of Creation of the Java API Library?**
 - The Options for Structure and Names was wide open
 - Over 5,000 API names were selected
 - The 5,000 methods were organized in a unique Structure
 - Merger seems less likely because there are so many different decisions to be made
 - Select API Names
 - Decide which methods to group together
 - No Clear Need for Google to make verbatim copies of 5,000 names and to organize all the methods in exactly the same way in order to accomplish the same function

Application to Java and Android API Names

WHEN IS MERGER ASSESSED?

- **At the Time Google Created the Android Platform?**
 - The Java Platform had become well known among programmers
 - Used around the world
 - Almost its own Standard
 - If Google wants to be interoperable or compatible with Java its Options for selecting API Structure and Names is much more limited
 - Of the 166 packages of Java APIs Google selects 37 that it believes are required in for interoperability and to permit programmers who are fans of Java to switch easily to the Android platform
 - Merger seems more likely because in order to satisfy the function of compatibility and interoperability the copying is required

Application to Java and Android API Names

NO MERGER FOUND

- **Appellant Court Found that Merger should be assessed at the Time the Java Platform was Created**
 - **COPYRIGHTABLE & INFRINGED.** The 5,000 API names and the Structure, Sequence and Organization (“SSO”) of the methods are found to be Copyrightable and infringed
 - **ONE DEFENSE LEFT OPEN.** The Fair Use Defense remains undecided

Fair Use Defense

“Fair Use” Factors

- **Four non-exhaustive factors courts consider:**
 1. **Purpose and character of the use, including:**
 - whether and to what extent the new work is transformative
 - whether the use serves a commercial purpose
 2. **Nature of the copyrighted work**
 3. **Amount and substantiality of the portion taken, and**
 4. **Effect of the use upon the potential market**

Fair Use Defense

- The Interoperability and Compatibility goal may be a positive fair use factor for Google
- The Commercial Goal of Google will not be a positive factor for fair use
- Android Platform is not interoperable with Java
- Small portion of Java Platform actually copied (3%)
- Result is not clear
- More Development of the Facts is needed
- Appellate Court sent case back to the lower court for consideration of the Fair Use Defense

Summary

- **COMPUTER SOFTWARE EXPRESSION IS PROTECTIBLE.** The particular way in which Computer Software is written is generally copyrightable expression
- **FUNCTION MAY BE COPIED.** Anyone is free to independently write their own software to implement the function of the Computer Software
- **MERGER.** If there is only one or a very limited number of ways in which the function of the software can be implemented then there is no copyright protection.
- **FAIR USE.** Interoperability and Compatibility may be considered in a fair use defense.

Moderator:

Jennifer Pierce, Charles Russell Speechlys, UK

Panelists:

Arthur Rose, Knobbe, Martens, Olson & Bear, USA

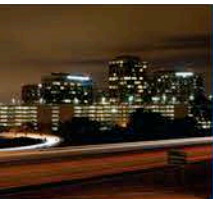
Abraham Alegria Martinez, Alegria Martinez & Fernandez
Wong, S.C., Mexico

Marco Venturello, Venturello e Bottarini Avvocati, Italy

Yu Sarn Chiew, Yusarn Audrey, Singapore



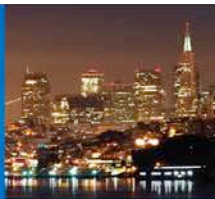
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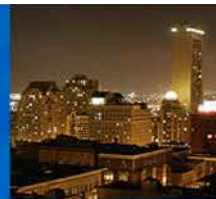
Orange County



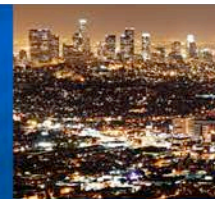
San Diego



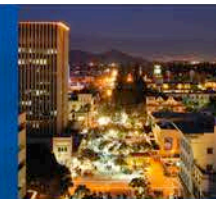
San Francisco



Silicon Valley



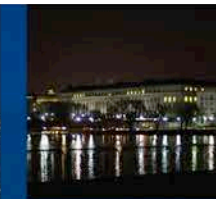
Los Angeles



Riverside



Seattle



Washington DC