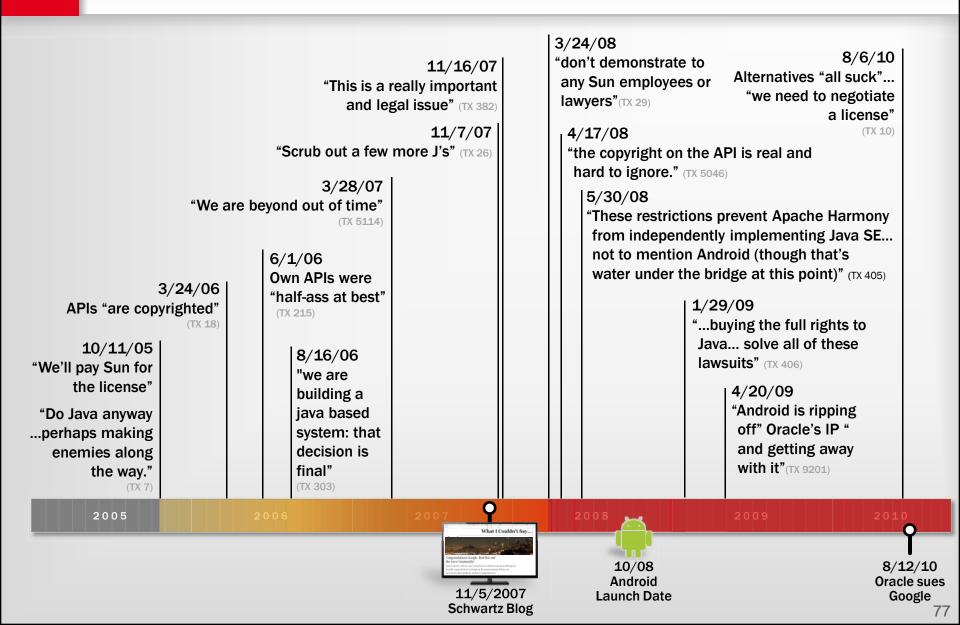
Google Acted in Bad Faith



PUBLIC

11/5/07 SCHWARTZ BLOG

"I just wanted to add my voice to the chorus of others from Sun in offering my heartfelt congratulations to Google on the announcement of their new Java/Linux phone platform, Android. Congratulations!"

PRIVATE

GOOD FAITH

3/8/07

"The Google thing is really a pain. They are immune to copyright laws, good citizenship, they don't share."

TRAN

PUBLIC

MMERCIALITY

11/5/07 SCHWARTZ BLOG

"I just wanted to add my voice to the chorus of others from Sun in offering my heartfelt congratulations to Google on the announcement of their new Java/Linux phone platform, Android. Congratulations!"

PRIVATE

ATIVE

GOOD FAITH

11/05/07

"They're claiming developers are undeserved – which is crap."

TX 2353

TRAN

PUBLIC

11/5/07 SCHWARTZ BLOG

"I just wanted to add my voice to the chorus of others from Sun in offering my heartfelt congratulations to Google on the announcement of their new Java/Linux phone platform, Android. Congratulations!"

PRIVATE

GOOD FAITH

11/07/07

"I have no [sic] clue what they're up to – my sense is they're playing fast and loose with licensing terms, and they're going to start pissing people off..."

TRAN

PUBLIC

11/5/07 SCHWARTZ BLOG

"I just wanted to add my voice to the chorus of others from Sun in offering my heartfelt congratulations to Google on the announcement of their new Java/Linux phone platform, Android. Congratulations!"

PRIVATE

GOOD FAITH

ATIVE

3/26/08

"They also take Java for Android, without attribution or contribution. This is why I love scroogle"

TX 1056

TRAN

PUBLIC

MMERCIALITY

11/5/07 SCHWARTZ BLOG

"I just wanted to add my voice to the chorus of others from Sun in offering my heartfelt congratulations to Google on the announcement of their new Java/Linux phone platform, Android. Congratulations!"

PRIVATE

ATIVE

GOOD FAITH

4/20/09

"[T]he battles with... Google Android."

TX 2362

Google Admits: Would Not Make Decisions Based on an Announcement





ANDY RUBIN Head of Android

Google

- Q.All right. And when you heard that Sun was planning to release an open source implementation of Java, did you tell the Google engineers, Stop working, Sun's about to release an implementation of a Java platform and APIs?
- A.No. I mean, that wouldn't make business sense to bet our whole project on an announcement, so I had my engineers stay the course. They asked me the same questions when they read the announcement and I continued to hedge, as I had done throughout the entire project.

Google Knew Copying Java API Packages Was Wrong





ERIC SCHMIDT Executive Chairman

Google

Q. Now, there came a time when Google was sufficiently worried about being sued that it thought about buying all the rights to Java; correct, sir?

A. Yes.

The Factors Overwhelmingly Favor Oracle



The Factors Overwhelmingly Favor Oracle



Fair Use Factors

CREATIVITY The nature of the copyrighted work;

JUDGE ALSUP'S INSTRUCTION

"It is undisputed that the declaring code and the structure, sequence, and organization of the 37 API packages at issue were sufficiently creative and original to qualify for copyright protection."

API Design Is "Intensely Creative"

2 CREATIVITY

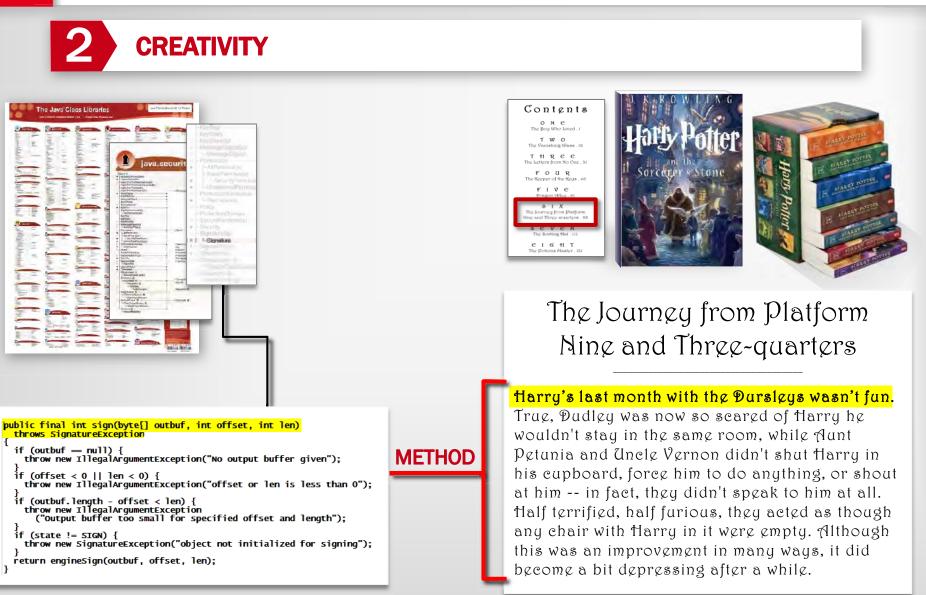


MARK REINHOLD Chief Architect of Java Platform Group

ORACLE

- Q. And you testified you've been working for 20 years in this field designing APIs. Do you consider the process of designing APIs to be creative?
- A. Oh, it's intensively creative. That's why I like the Harry Potter analogy so much. It really is a lot like writing a book. You have to keep a lot of stuff in your head, and the end result is -- is very, very rich and complex.

The Java API Package Design Is Like a Book Series



Fair Use Factors

CREATIVITY The nature of the copyrighted work;

"When there are many possible ways to structure, sequence, and organize a program, the particular way chosen for a copyrighted program and individual lines of declaring code may be (or may not be) highly creative."

Declaring Code is "Extremely Expressive"





MARK REINHOLD Chief Architect of Java Platform Group



- Q. In what way is declaring code expressive, if at all, Dr. Reinhold?
- A. Declaring code is extremely expressive. There are an infinite number of creative choices necessary to design it well.

Reinhold: Infinite Number of Creative Choices

How many packages should there be?

Which classes do we want?

Is one class a subclass of this one or is it a subclass of that one over there? How should our classes and interfaces relate to each other?

Does a class implement some interface in this API?

How do the methods relate?

For every method, what kinds of inputs does it take?

What kind of outputs does it produce?

What kind of errors can it report?

Tr. at 1460:1-22 (Reinhold)

The Design of Java API Packages Is Creative



API design is an art, not a science. Strive for beauty, and trust your gut.

When designing an AP is the less solutions. underlying problems and full the best solutions. Structure requirements as use-cases: they are the yardstick against which you'll measure your API. Structure requirements as use-cases: they are the yardstick against which you'll measure your API. Sarty drafts of APIs should be alsed, typically one page with class and method signatures and one-line descriptions. This makes it easy to restructure the API when Sarty drafts of APIs should be alsed, typically one page with class and method signatures and one-line descriptions. This makes it easy to restructure the API when Sarty drafts of APIs should be alsed, typically one page with class and method signatures and one-line descriptions. This makes it easy to restructure the API when Sarty drafts of APIs should be alsed.
Structure requirements as use-cases: Use we can also with class and method signatures and one-line descriptions. This is a structure of the st
Early drafts of APTs should be short, specing doe provide the second state of the second state for the second state of th
Streture reveals reveals reveals and the short, bysically one page with class and metroro symmetric reveals and reveals of APTs should be short, bysically one page with class and metroro symmetric reveals and reveals one of the reveals of the indication of the reveals of the
fundamentally broken APL
Involutional works and for user-cases as the API evolves. Not only will this potent you new works and the case for user-cases as the API evolves. Not only will this potent you new works and the case of the transmission of the second term of term
Example code should be exemplary. If an API is unto reaction and an antiparticle and the should be an an an and the
Example code sources you a thousant full. You can't please everyone so also to displease everyone equally. Not APS are overcentrated. Expect API-dealog michains do to fadaress of insignation. You can't reasonably hope to insight everyone will do with an API, or how it will Expect API-dealog michains on of a system.

The Design of Java API Packages Is Creative

2 CREATIVITY



JOSHUA BLOCH Former Chief Java Architect

Google

JAVAPOLIS 2005

Conclusion

- API design is a noble and rewarding craft
 - Improves the lot of programmers, end-users, companies
- This talk covered some heuristics of the craft
 - Don't adhere to them slavishly, but...
 - Don't violate them without good reason
- API design is tough
 - Not a solitary activity
 - Perfection is unachievable, but try anyway



OAGOOGLE0100219557

www.javapolis.com

Trial Exhibit 624, Page 47 of 47

The Design of Java API Packages Is Creative



JUDGE ALSUP'S INSTRUCTION:

"Creative writing and expression lie at the very heart of copyright protection"

Jury Instruction 28 at p 15



JOSHUA BLOCH Former Chief Java Architect

Google

Q. And are some APIs harder to write than others?

 A. Because of the complexity of figuring out how best to express what it is that the programmer wants done.
 Some tasks are more complicated than others.

Tr. at 1004:21-24

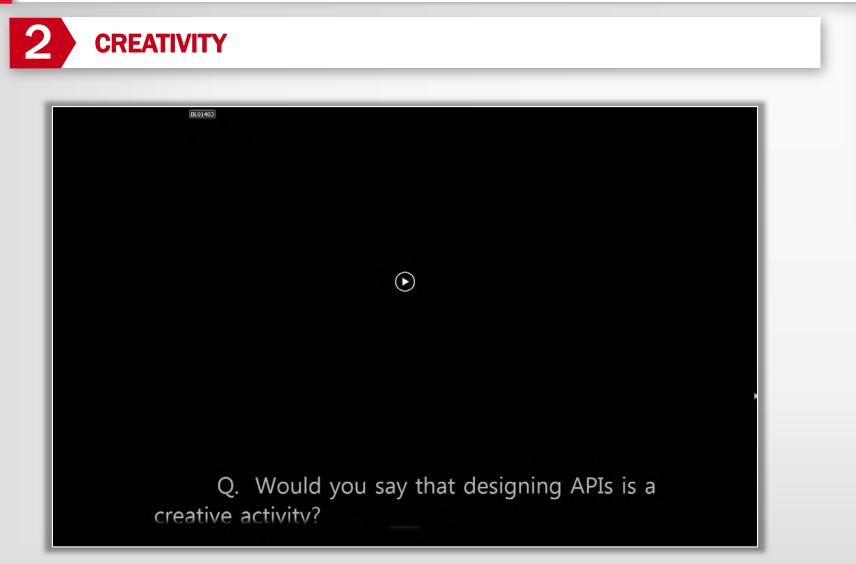
The Java API Packages Are Creative





DOUG SCHMIDT Oracle Expert The only thing that made it look the way it did was the degree of creativity and experience of the developers who wrote those classes.

Designing Java API Packages is a Creative Activity



Bob Lee, Android Core Library Lead

Depo. at 14:3-6

Placeholder – Reinhold Labels Callout

CREATIVITY



MARK REINHOLD Chief Architect of Java Platform Group



Q. Do you think it's accurate to describe the Java APIs as labels?

A.As labels? I think that's laughably
simplistic.

```
Q. Why do you say that?
```

A.Well, a label is just a name. If all we had were names, then we wouldn't need any of the - of the structure and organization that you actually find in the API packages.

The Factors Overwhelmingly Favor Oracle



The Factors Overwhelmingly Favor Oracle



Factor 3: The Java API Packages Are Important

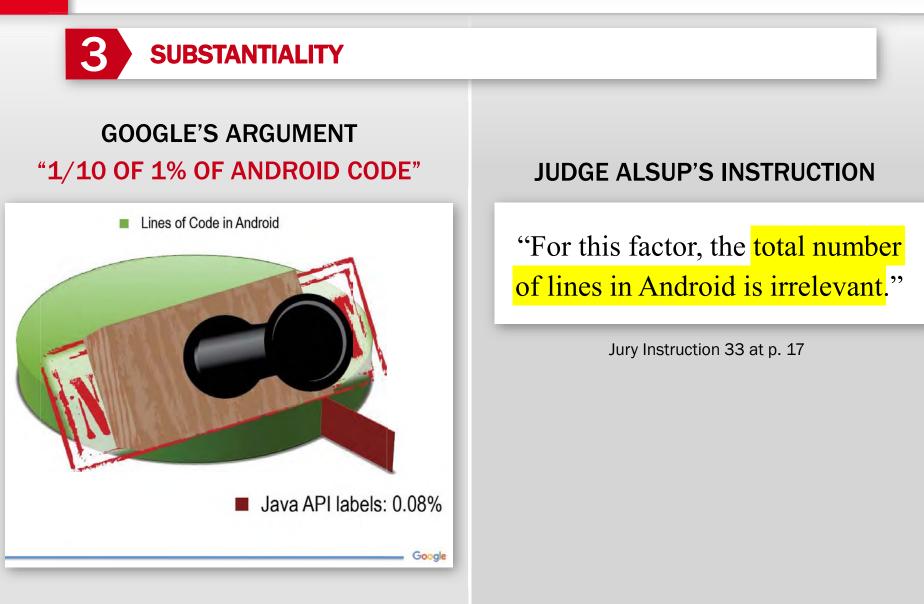
SUBSTANTIALITY

The amount and substantiality of the portion used in relation to the copyrighted work as a whole; and

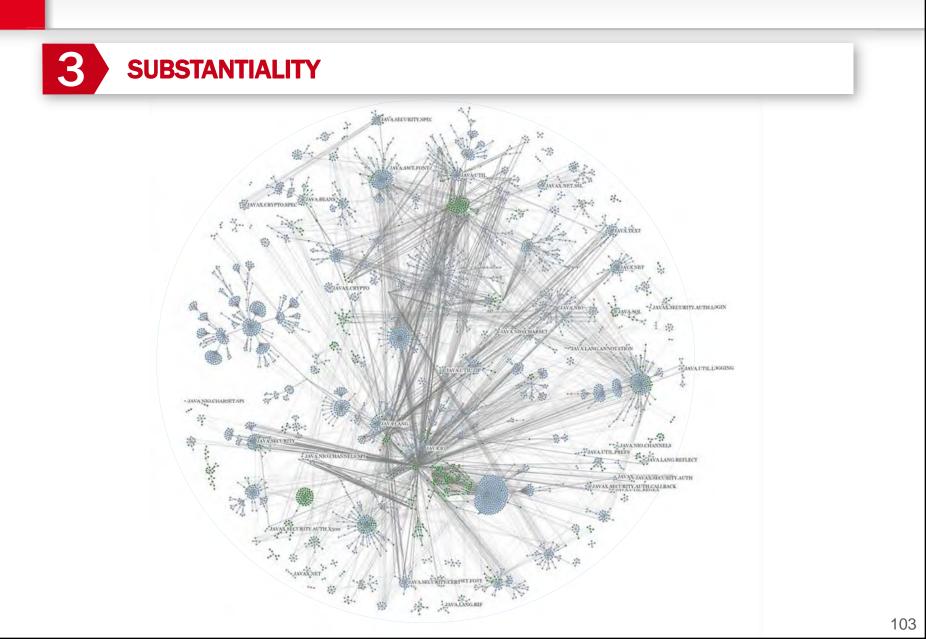
"The third statutory factor is the amount and substantiality of the portion used in relationship to the copyrighted work as a whole, which concerns how much of the overall copyrighted work was used by the accused infringer."

"Even a small part may be qualitatively the most important part of a work."

The Total Amount of Android Code Is Not Relevant



Google Copied the Heart of the Java Platform



Schmidt: Copied Java APIs Were Substantial





DOUG SCHMIDT Oracle Expert The final point I would like to make is that the portions of the Java APIs that were copied are substantial.

Reinhold: Google's Copying Was Substantial





MARK REINHOLD Chief Architect of Java Platform Group



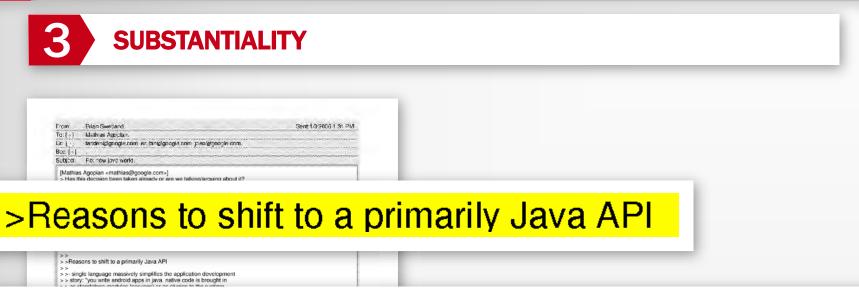
You could think of that - in the Harry Potter analogy, it would be the titles of the books, the headings on each chapter, the topic sentences of every paragraph, but not just that.

It's also all of the connections drawn between those elements over time.

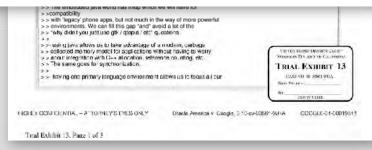
If it wasn't important, why did Google copy it?

If it wasn't important, why didn't Google write their own declaring code?

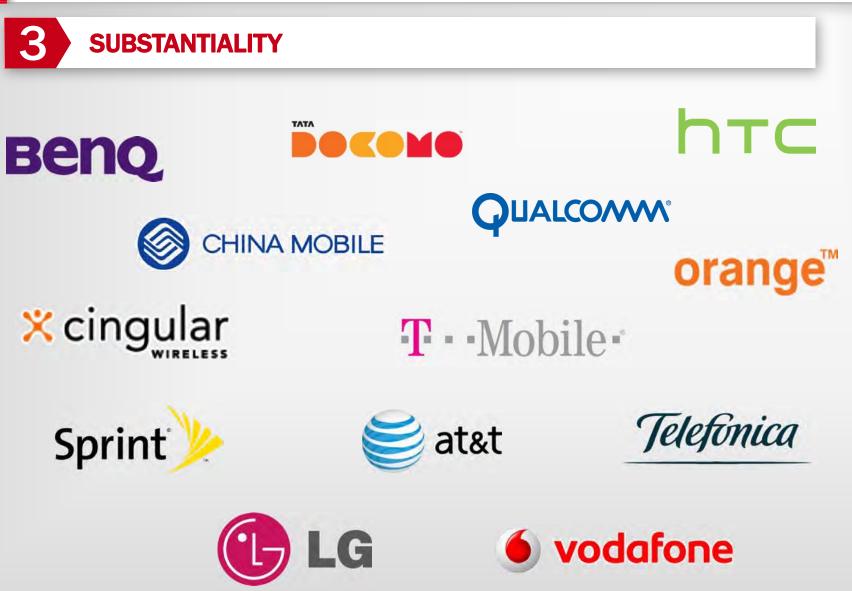
Importance: Using Java APIs Save "a pretty crazy amount of time"



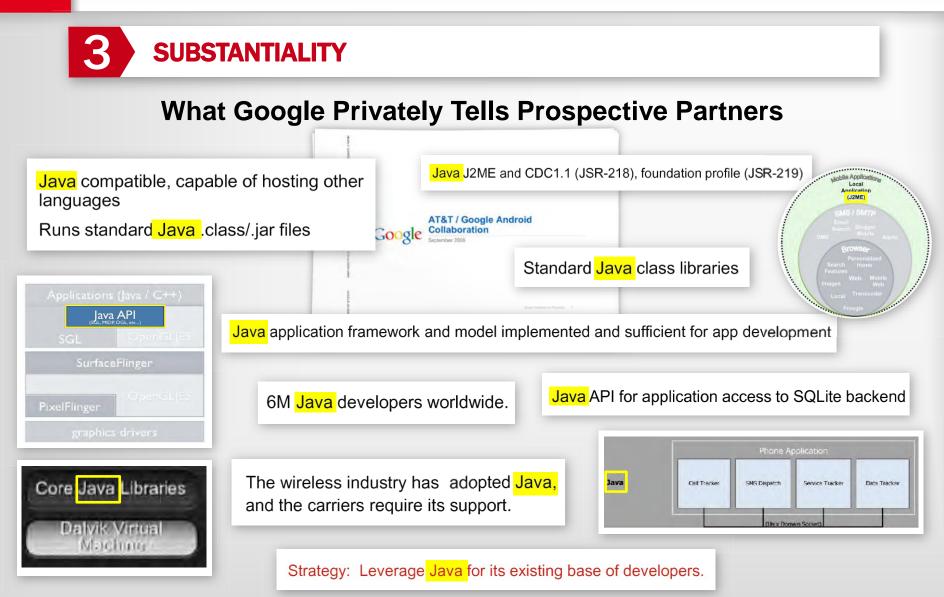
>- even on a system with processes / mmu / etc, java provides a nice
 > safetynet and faster app development and debuggability. (this
 > is based on experience developing hiptop -- java saved us a
 > pretty crazy amount of time).



Google's Actions Prove How Important the Java API Packages Were



Google's Actions Prove the Java API Packages Were Important to the Market



TX 387 at 7, 9, 34, 40, 50, 60, 61, 69, 74; TX 158 at 10; TX 5586 at 2, 7

Language Does Not Equal APIs

SUBSTANTIALITY



MARK REINHOLD Chief Architect of Java Platform Group

ORACLE

- Q.Are the Java APIs part of the Java programming language?
- A.No, they're not. The APIs the APIs and the language are distinct parts of the Java platform.

Tr. at 1462:25 - 1463:2



OWEN ASTRACHAN Google Expert

- Q. The Java programming language is different from the APIs; is that correct?
- A.Yes, I think the programming language and the APIs are used together, but they're different. Yes. That's reasonable, yes.

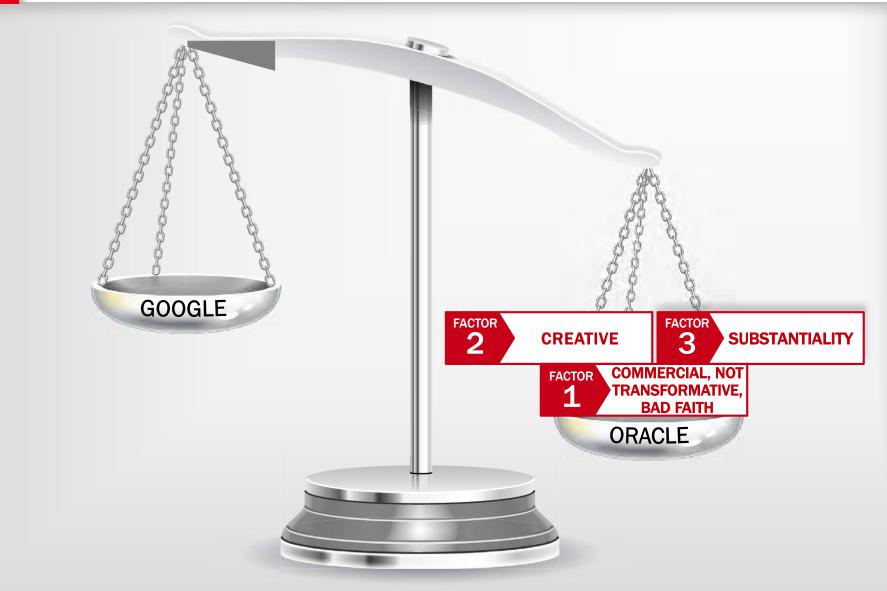
Language Does Not Equal APIs

3 SUBSTANTIALITY

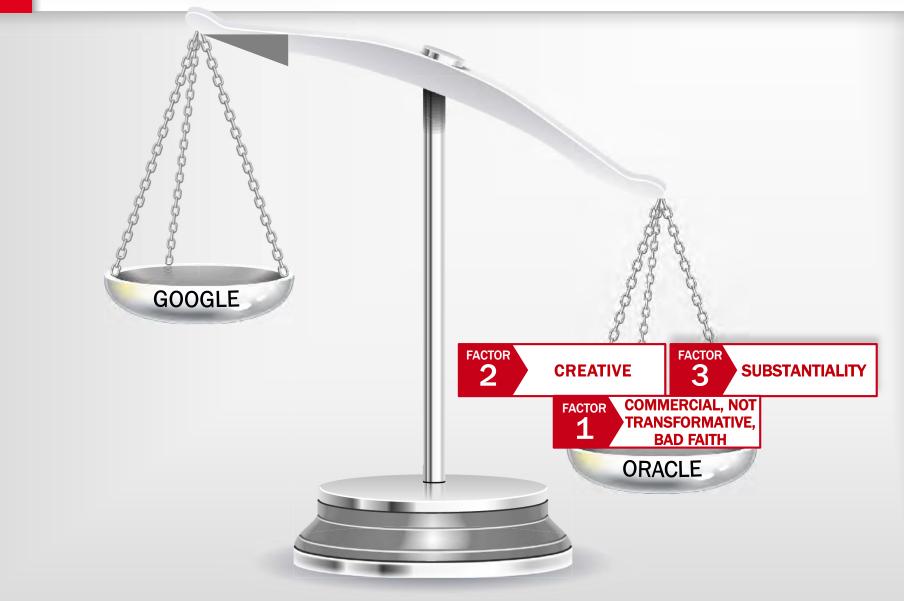


Urs Hölzle Senior Vice President, Google

The Factors Overwhelmingly Favor Oracle



The Factors Overwhelmingly Favor Oracle



Android Harmed the Potential Licensing Market of Both Java SE and ME

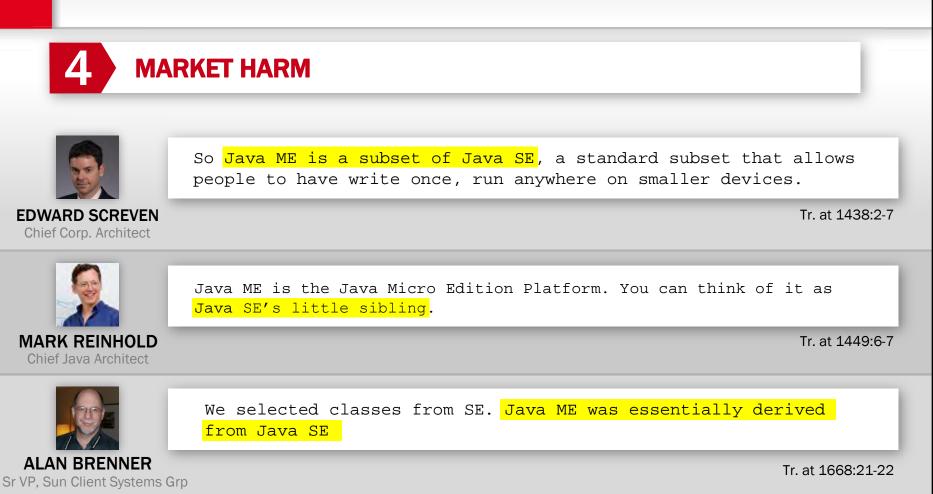
MARKET HARM

The effect of the use upon the potential market for or value of the copyrighted work.

"The fourth and final factor is the effect of the accused infringer's use on the potential market for or value of the copyrighted work"

"The term 'potential market for or value of' refers to the value of the entire copyrighted work itself and licensing opportunities for the copyrighted work and its derivatives"

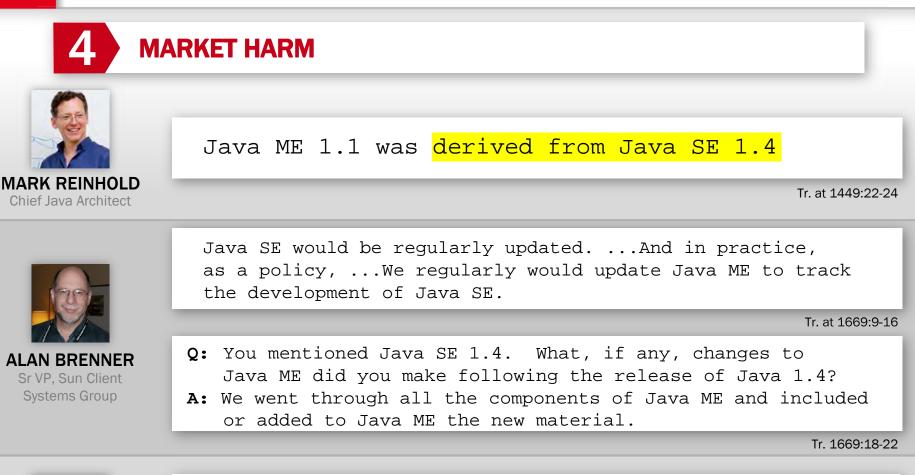
Java ME Is a Derivative Work of Java SE





OWEN ASTRACHAN Google Expert Q. Is it true that most of Java ME is a subset of something in SE?
A. I think that is reasonable.

Java ME Is a Derivative Work of Java SE





- Q: That indicates, as you understood when you filed your report, that there were 11 of the Java SE packages at issue in this case in the ME CDC, right?
- A: Yes. That's my understanding.

By 2006, Phones Had Evolved and Java SE Was Licensed for and Used in Smartphones

MARKET HARM



ALAN BRENNER Sr VP. Sun Client Systems Group

Over time, Java ME absorbed more and more of the Java SE functionality. And that became possible because devices were rapidly increasing in CPU capability, computational capability, memory, and battery, that allowed us to take on more of the scope of SE.

Tr. at 1670:9-13



OWEN ASTRACHAN Google Expert

Having a smartphone that you walk around with the power of what used to be a server has kind of changed the landscape of how we live with our digital devices.

Tr. at 1932:8-10







Factor 4: Google's Copying of the Java API Packages Caused Actual and Potential Harm to Oracle

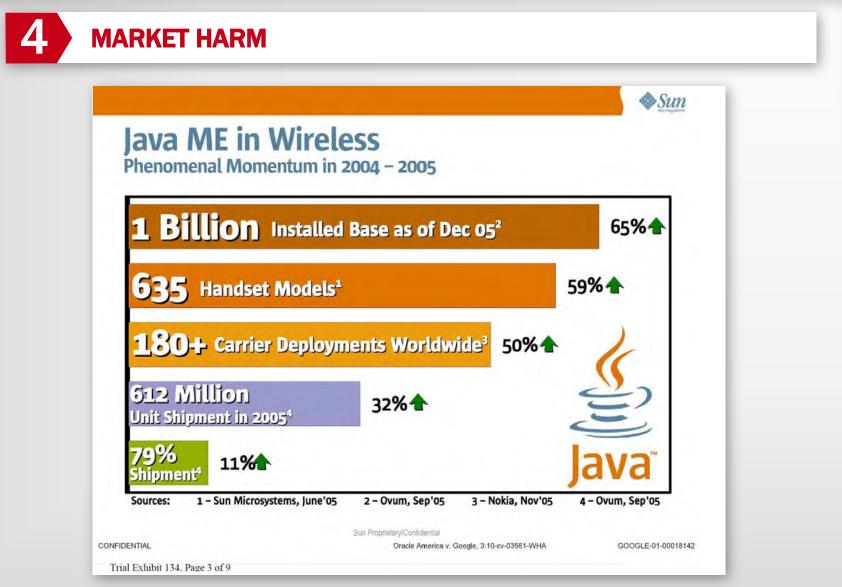
MARKET HARM

The effect of the use upon the potential market for or value of the copyrighted work.

"This is the single most important statutory factor, but it must be weighed with all other factors and is not necessarily dispositive."

"Actual present harm need not be shown. Nor is it necessary to show with certainty that future harm will result so long as some meaningful likelihood of future harm exists."

Java Had Phenomenal Momentum (Pre-Android)



Sun Was Well Positioned to Maintain Its Strong Market Share (Pre-Android)



Android Has Harmed Oracle

4 MARKET HARM



SAFRA CATZ Chief Executive Officer



- Q. In the course of your business at Oracle, have you learned to what extent, if any, Android has had an effect on Sun and Oracle?
- A. Well, Android's had a very negative effect on Sun Oracle in a number of ways.

Android Has Harmed Oracle

4 MARKET HARM



SAFRA CATZ Chief Executive Officer



First, it's - it's basically forked the Java whole principle, the whole Java community has been forked, meaning split into two because the whole idea of Java, as I mentioned yesterday, is write once, run on any platform. That's really the - the bottom line.

Google "locks programmers into Android"

4 MARKET HARM



EDWARD SCREVEN Chief Corporate Architect

ORACLE

- Q. What, if anything, is your understanding of the consequence of Android's failure to be an independent implementation as defined by the spec license?
- A. It locks programmers into Android. It means that they can't - their applications can't run in other environments, other than Android.

Google's Control of the Android Platform



Trial Exhibit 190, Page 6 of 8

Android Has Harmed Oracle

4 MARKET HARM



SAFRA CATZ Chief Executive Officer

ORACLE

Secondly, many of those customers that we used to license to take a copy, to take a licensed copy like Samsung or ZTE or Motorola, just different licensees, BlackBerry, etc., they don't need a license -- they don't take a license from us anymore because they use Android, which is free, and they end up using Android instead of actually paying us for a copy of -- of our software.

Android's Effect on Samsung License: \$40 Million Down to \$1 Million

4 MARKET HARM



SAFRA CATZ Chief Executive Officer



- Q. And how, if at all, did that affect the profitability of the Java business?
- A. It had a very negative impact. Companies like Samsung that would license a \$40 million contract were down to - would be licensing a million dollars.



Android Was "Devastating"

4 MARKET HARM



NEAL CIVJAN Former VP Worldwide OEM Software Sales



Q. All right. Can you tell us, sir, in one word the impact of Android on Java?

A. It was devastating.

Android Had a "Massive Impact Very Quickly"

4 MARKET HARM



NEAL CIVJAN Former VP Worldwide OEM Software Sales



- Q. And can you describe to our jury the impact that Android had on your licensing business.
- A. Well, Android was very came on very quickly, very strong. It was free. We were licensing for royalties, and it was being adopted in terms of new design wins for phones across the board and displacing Java on those phones and having a massive impact very quickly.

Customers Affected by Android











50 to 60%

ANDROID INSTEAD OF JAVA

MASSIVE LOST REVENUE PROJECTED OVER A THREE-YEAR PERIOD

Android "Hijacked" Java

4 MARKET HARM



NEAL CIVJAN Former VP Worldwide OEM Software Sales



Q. Just tell us the impact of Android on the morale of your team.

A. It was devastating to me personally and my team because we put our heart and soul into making this as successful- I mean, you guys have probably all heard of Java and it's a huge success story in the industry, and it was hijacked. You know, they took our technology and they gave it away for free and they took our customers, and it was devastating.

Android Caused Price Erosion for Oracle

4 MARKET HARM



SAFRA CATZ Chief Executive Officer



- Q. What was the situation with respect to Amazon licensing?
- A. So for Amazon for the Kindle it's a reader. For the Kindle Reader had used Java to create the Kindle Reader for many years. And then they had another product called the Kindle Fire and that one they used Android so they didn't license Java at that time.
- Q. And what happened?
- A. Well, in order to compete with them, we ended up giving them like a 97 and a half percent discount for the Paperwhite. So instead of what we would have historically charged them, because our competition was free, they - they we had to offer them a 97 plus basically couple cents on the collar price from list price.

Android Significantly Harmed Oracle

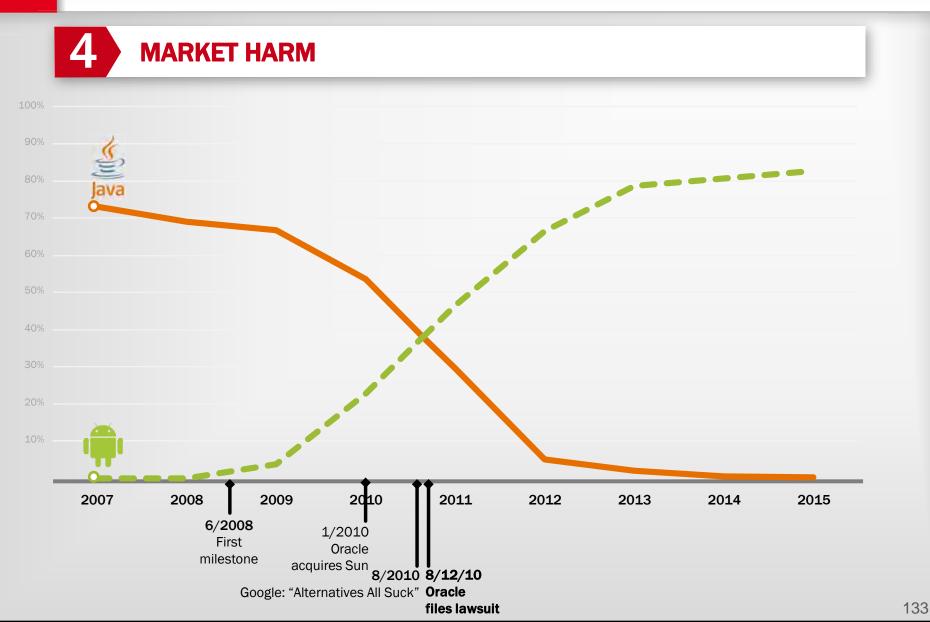




ADAM JAFFE Oracle Economics Expert When we look at the actual evidence, what we find is that [Android] did, in fact, significantly harm Oracle.

Amazon.com. kindle Sony Ericsson

Java-Based Android vs. Licensed Java Smartphone Market Share



Android Closed the Door to the Smartphone Market





SAFRA CATZ Chief Executive Officer



- Q. And what about more advanced phone software?
- A. Well, as far as a phone platform, we looked at that very hard and realized that Android was just too far out ahead in the market and that it would be very difficult to compete with free, especially since they were using our software in it.

Android Closed the Door to the Smartphone Market

4 MARKET HARM



LARRY ELLISON Chairman of the Board

ORACLE

We never made an effort to enter the smartphone market. We analyzed whether we had a reasonable likelihood of success if we entered the smartphone market and decided, you know, that Android had already there already was a Java smartphone with a lot of momentum, and, therefore, we could not enter the smartphone market.

Android Closed the Door to the Smartphone Market





HENRIK STAHL VP Product Management



Those decisions were based on the simple observation that we didn't think there was any market left after Android appeared and got dominance, and no investments have been made since, as far as I'm aware.



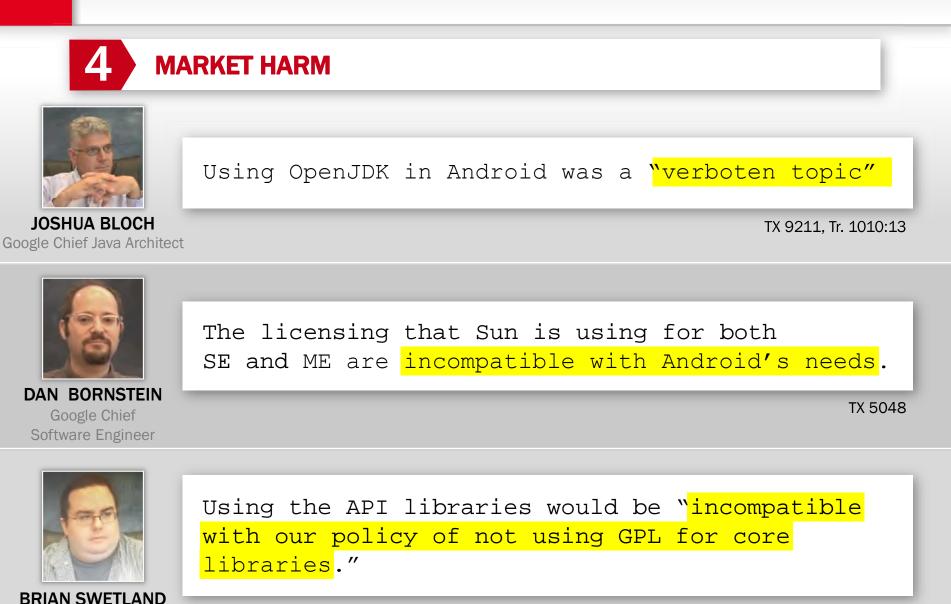


Andy Rubin

- **Q.** But you looked at it, you understood it, and you decided the OpenJDK license was unacceptable to you; true?
- A. I believe so, yes.

Tr. at 844:19-21

OpenJDK License Not a Viable Alternative Back Then



Google Sr. Staff Engineer

Depo. at 139:1-2

Civjan: OpenJDK Didn't Harm Business

4 MARKET HARM



NEAL CIVJAN Former VP Worldwide OEM Software Sales

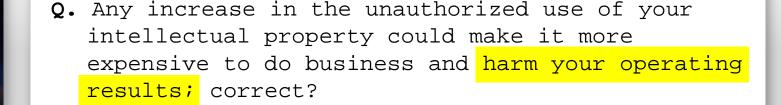


Q. Now, as - as Sun and then Oracle's Vice President of worldwide sales, you knew that opening sourcing Java through OpenJDK could reduce the company's competitive advantage from licensing the software, didn't you?

A. It didn't really impact the business.

Google Executives Admit Harm From Unauthorized Copying





Executive Chairman A.



ERIC SCHMIDT

A. Yes.

MARKET HARM

Tr. at 392:18-21



CEO



Q. And the same would apply to Oracle. You would agree with me that any increase in the unauthorized use of Oracle's intellectual property could make it more expensive to do business and harm Oracle's results. Would you agree with that statement?

A.I mean, yes, it could make it more expensive.

A "Free" License Still Has Restrictions

MARKET HARM



ERIC SCHMIDT Executive Chairman



- A. There is a license that allows you to use it without having to pay for it.
- Q. So when you don't pay for it, can
 we agree that's for free?
- A. Subject to the terms of the license, yes.

Google Protects Its Own Intellectual Property

4	MARKET HARM		
	19p/Javav gospic cemispis/s6wedst5ma3tml	Citer 1	
Autor of the second sec	AdWords: API beta Forms & Conditions Inst a logal conserved balance (conserved balance) Inst a logal conserved balance (conserved balance) Inst and velocities (conserved balance) AdVords API and its predictionics you goes to actionate for the Array and advords API and its predictionics you goes to actionate for the terms of these, array advords API and its predictionics you goes to actionate for the terms of these, array	Terms & Conditions	
Curota & Usage + Terms & Conditions Feature Use Cases	AdVords program and any nociauni management using the AdVords ACT is a spigment. AdVords terms and conditions between you and Coople (not "AdVords Terms " "Coople Agreement means the Coople antity with when you nave entered wito your Advords Terms Google Inc. or Google treater Limited) and its affectes.	e Tha (editor	

The AdWords API and the AdWords Specifications are, as applicable, the intellectual property and proprietary information of Google. Your right to use, copy and to retain your copy of the AdWords API and the AdWords API Specifications is contingent on your full compliance with this AdWords API Agreement. If you violate all or part of this AdWords API Agreement, your access to the AdWords API may be suspended or terminated without notice. If you decide to terminate your agreement to all or part of this AdWords API Agreement, your agreement to all or part of this AdWords API Agreement. Solve and the AdWords API Agreement, you must cease all use of the AdWords API and destroy any copies of the AdWords API Specifications, and if requested by Google, certify to Google such destruction.

Normans Domerrie Calinoise TRIAL EXHIBIT 5250 Context Identification Data Bartico	D tensor right) in the source and object code of the Interval Use Chily AdVincts API Client source for solution solutions and advince and solutions and advince and solutions and advince and relations on leaded to foregary and warned solution by the Devenues "Inter 4 warty" results a party shot than Googe or you insulating discussion any.
NT MOLTOCOM	detabase, software of service owned by or uncer the centre of a party other than Google
http://www.acchine.newsach/2005001400	1 3 Minu: "www.toods.com/mailed-scriptomailenil5/10/2018-11-27-01-840
	Trial Exhibit 5260, Pape 1 of 6

A "Free" License Still Has Restrictions

MARKET HARM



ERIC SCHMIDT Executive Chairman



- Q. And it says here that the Adwords API and AdWords specifications - do you see those words?
- A. I do.
- Q. And it says those are the intellectual property and proprietary information of Google. Do you see that?
- A. I do.
- Q. And you do expect people with these contracts to honor them, do you not?
- A. We do.

Google's Own Expert: Unauthorized Duplications Must Not Be Condoned

MARKET HARM	
*** ACM ConcetERs are Redeviate Caster **> ACM ConcetERs are Redeviate Caster **> VertE State Database Caster **> VertE State Caster **> VertE State Database ** VertE State Database *** VertE Sta	OWEN ASTRACHAN
This Code, concising of 24 imperatives formulated as statements of cersonal responsibility, ident ties the elements of such a commitment. It contains many, but not all issues professionals are likely to face. Section 1 outlines fundamental ethical considerations, while <u>Section 2</u> addresses additional, more	Google Expert

1.5 Honor property rights including copyrights and patent.

Violation of copyrights, patents, trade secrets and the terms of license agreements is prohibited by law in most circumstances. Even when software is not so protected, such violations are contrary to professional behavior. Copies of software should be made only with proper authorization. Unauthorized duplication of materials must not be condoned.

GENERAL MORAL IMPERATIVES.
 As an ACM member i will init.1.1 Contribute to society and human well-being.
 This principle concerning the quality of life of all people offirms an obligation to protect fundamenta

II servew americanitie of an order of price and professional sector. Trail Exhibit 5038, Page 1 of 9

Factor 4: Google's Copying of the Java API Packages Caused Actual and Potential Harm to Oracle

MARKET HARM

The effect of the use upon the potential market for or value of the copyrighted work.

"This factor considers not only the extent of any market harm caused by the accused infringer's actions but also whether unrestricted and widespread use of the copyrighted materials of the sort engaged in by the accused infringer would result in a substantially adverse impact on the potential market for the copyrighted work."

Other Oracle Markets at Risk

MARKET HARM

What would happen if there was "unrestricted and widespread use of the copyrighted materials of the sort engaged in by" Google?

MOBILE PHONES

TABLETS/E-READERS

AUTOMOTIVE

INTERNET OF THINGS

VOICE OVER INTERNET PROTOCOL (VoIP)

CAMERAS

Jury Instruction 34 at p. 18

HOME ENTERTAINMENT (Televisions/Set-top boxes/ Blu-ray/Gaming)

GPS SYSTEMS

HOUSEHOLD APPLIANCES

VENDING MACHINES

PRINTERS

PAYMENT TERMINALS & POINT OF SALES SYSTEMS

WEARABLES

MEDIA PLAYERS (Including set-top boxes)

GAME CONSOLES

WEB BROWSERS

If Everyone Did What Google Did "We Wouldn't Have a Business"

4 MARKET HARM

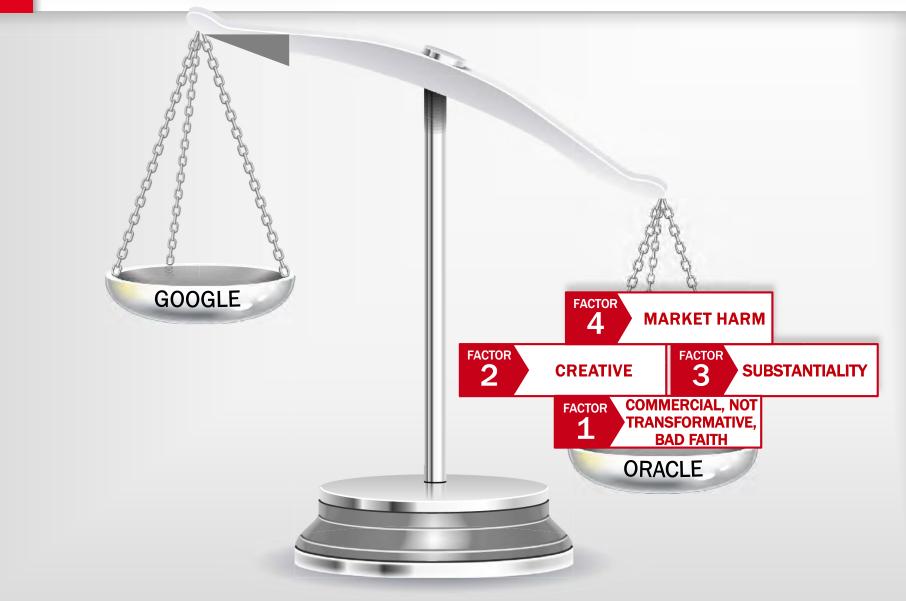


SAFRA CATZ Chief Executive Officer

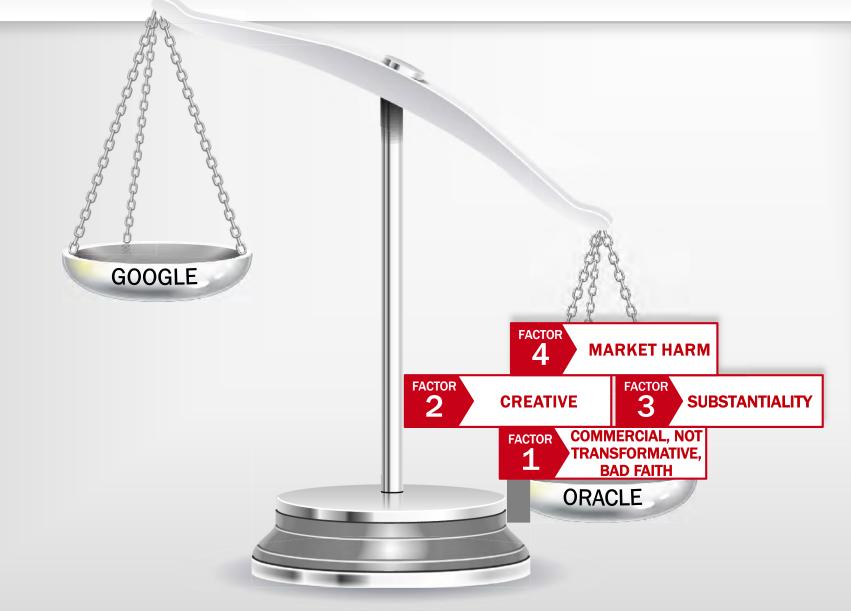
ORACLE

- Q. Ms. Catz, one of the considerations that the judge has instructed the jury is relevant to fair use is what would happen if everyone could do what Google is doing. What are your thoughts with respect to Oracle's business, if that were the case?
- A. If everyone took a copy of our software without actually licensing it, we wouldn't have a business any more. We simply wouldn't be able to afford to invest...

The Factors Overwhelmingly Favor Oracle



The Factors Overwhelmingly Favor Oracle



What This Case Is About

Decisions

Consequences

Verdict Form

Has Google shown by a preponderance of the evidence that its use in Android of the declaring lines of code and their structure, sequence, and organization from Java 2 Standard Edition Version 1.4 and Java 2 Standard Edition Version 5.0 constitutes a "fair use" under the Copyright Act?



