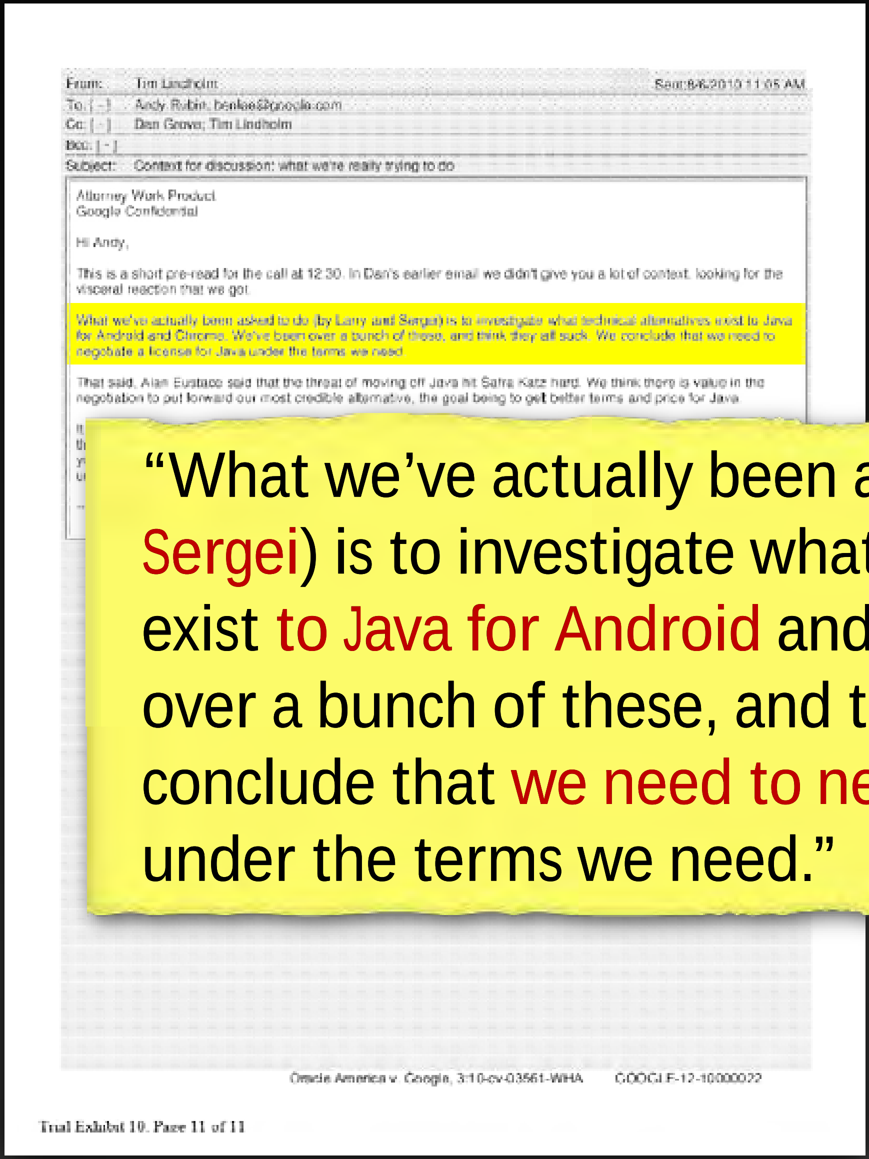
Oracle v. Google

Why Are We Here?



From: Tim Lindholm　Sent:8/6/2010 11:05 AM
To: [-] Andy Rubin; benlee@google.com
Cc: [-] Dan Grove; Tim Lindholm
Bcc: [-]
Subject: Context for discussion: what we're really trying to do

Attorney Work Product
Google Confidential

Hi Andy,

This is a short pre-read for the call at 12:30. In Dan's earlier email we didn't give you a lot of context, looking for the visceral reaction that we got.

What we've actually been asked to do (by Larry and Sergei) is to investigate what technical alternatives exist to Java for Android and Chrome. We've been over a bunch of these, and think they all suck. We conclude that we need to negotiate a license for Java under the terms we need.

That said, Alan Eustace said that the threat of moving off Java hit Safra Katz hard. We think there is value in the negotiation to put forward our most credible alternative, the goal being to get better terms and price for Java.

Oracle America v. Google, 3:10-cv-03561-WHA　GOOGLE-12-10000022

Trial Exhibit 10, Page 11 of 11

August 6, 2010
From: Tim Lindholm
To: Andy Rubin

"What we've actually been asked to do (by Larry and Sergei) is to investigate what technical alternatives exist to Java for Android and Chrome. We've been over a bunch of these, and think they all suck. We conclude that we need to negotiate a license for Java under the terms we need."

TX 10 at GOOGLE-12-10000022

What Is Java?

Java Is A Software Programming Development Environment

Java Programming Language

Java APIs and Class Libraries

Java Virtual Machine

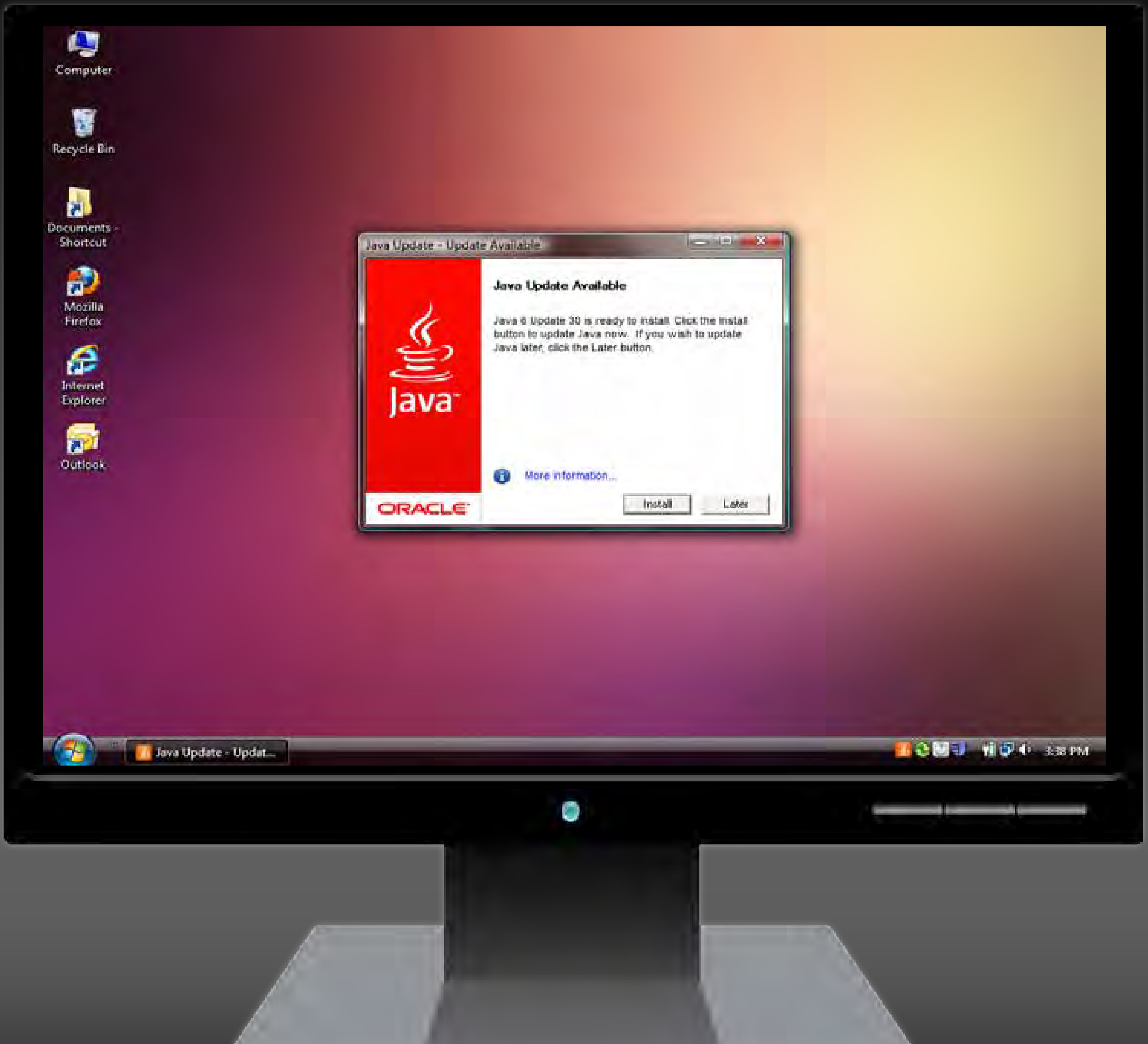
Java Achieved Enormous Success

Widely adopted

Runs on many kinds of devices, including phones

Has millions of application developers

Java On Our Computers



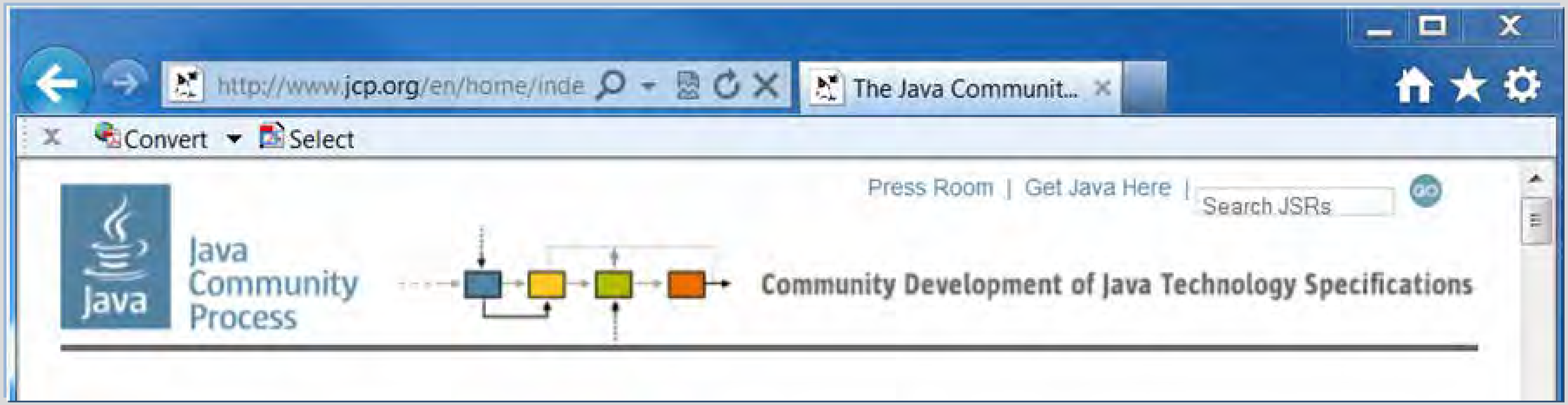
Java Update - Update Available

Java Update Available

Java 6 Update 30 is ready to install. Click the Install button to update Java now. If you wish to update Java later, click the Later button.

World's Leading Companies License Java For Their Products

And Participate In The Java Community Process



Java Community Process

Community Development of Java Technology Specifications

FUJITSU
NORDSTROM
ORACLE
hp
AMERICAN EXPRESS
redhat
intel
SAP
NORTEL
SONY
Sony Ericsson
Bank of America
Time Warner Cable
ebY
IBM
CREDIT SUISSE
UBS
NOKIA
Adobe
Symantec.
Panasonic
vmware

Java Community Relies On Java Technology Components

Java Programming Language

Java APIs and Class Libraries

Java Virtual Machine

Sun Microsystems Invented Java

- Founded in 1982 in Santa Clara, CA.
- Developed and licensed Java technology since 1990s.
- Obtained key Java intellectual property.
- Created Java ecosystem and community process.

BusinessWeek
SUN'S RISE
"Kick Butt and Have Fun"
That's Scott McNealy's motto – and it's taking
Sun Microsystems to new heights.

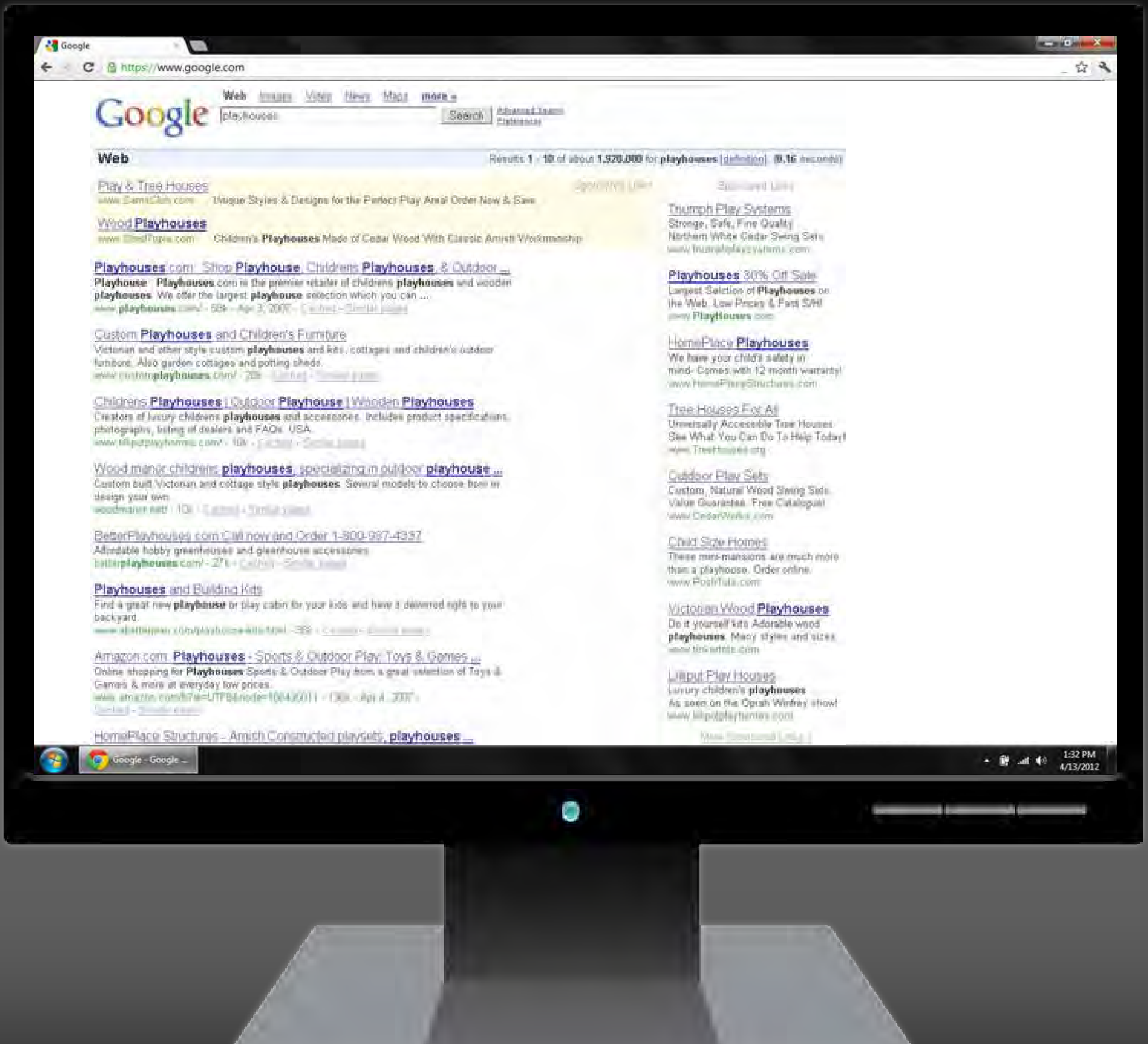
Oracle Now Owns Java

- In 2010, Oracle acquired Sun for $7.4 billion.
- Oracle was founded in 1977.
- Oracle is the world's leading database company.
- Sun is now part of Oracle.
- Oracle is now responsible for the Java community.

ORACLE®

Java was a major reason Oracle acquired Sun

By 2005, Google Became Leading Search Engine On Desktops



playhouses

Web Results **1** - **10** of about **1,920,000** for **playhouses** [definition]. (**0.16** seconds)

Sponsored Links

Play & Tree Houses
www.SamsClub.com Unique Styles & Designs for the Perfect Play Area! Order Now & Save

Wood **Playhouses**
www.ShedTopia.com Children's **Playhouses** Made of Cedar Wood With Classic Amish Workmanship

Playhouses.com : Shop **Playhouse**, Childrens **Playhouses**, & Outdoor ...
Playhouse . **Playhouses**.com is the premier retailer of childrens **playhouses** and wooden **playhouses**. We offer the largest **playhouse** selection which you can ...
www.**playhouses**.com/ - 58k - Apr 3, 2007 - Cached - Similar pages

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Victorian and other style custom **playhouses** and kits , cottages and children's outdoor furniture. Also garden cottages and potting sheds.
www.custom**playhouses**.com/ - 20k - Cached - Similar pages

Childrens **Playhouses** | Outdoor **Playhouse** | Wooden **Playhouses**
Creators of luxury childrens **playhouses** and accessories. Includes product specifications, photographs, listing of dealers and FAQs. USA.
www.lilliputplayhomes.com/ - 10k - Cached - Similar pages

Wood manor childrens **playhouses**, specializing in outdoor **playhouse** ...
Custom built Victorian and cottage style **playhouses**. Several models to choose from or design your own.
woodmanor.net/ - 10k - Cached - Similar pages

BetterPlayhouses.com Call now and Order 1-800-997-4337
Affordable hobby greenhouses and greenhouse accessories
better**playhouses**.com/ - 27k - Cached - Similar pages

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Find a great new **playhouse** or play cabin for your kids and have it delivered right to your backyard.
[illegible] - 38k - Cached - Similar pages

Amazon.com: **Playhouses** - Sports & Outdoor Play: Toys & Games ...
Online shopping for **Playhouses** Sports & Outdoor Play from a great selection of Toys & Games & more at everyday low prices.
www.amazon.com/b?ie=UTF8&node=10043011 - 130k - Apr 4, 2007 - Cached - Similar pages

HomePlace Structures - Amish Constructed playsets, **playhouses** ...

Sponsored Links

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Outdoor Play Sets
Custom, Natural Wood Swing Sets
Value Guarantee. Free Catalogue!
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These mini-mansions are much more than a playhouse. Order online.
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Do it yourself kits Adorable wood **playhouses**. Many styles and sizes
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Lilliput Play Houses
Luxury children's **playhouses**
As seen on the Oprah Winfrey show!
www.lilliputplayhomes.com

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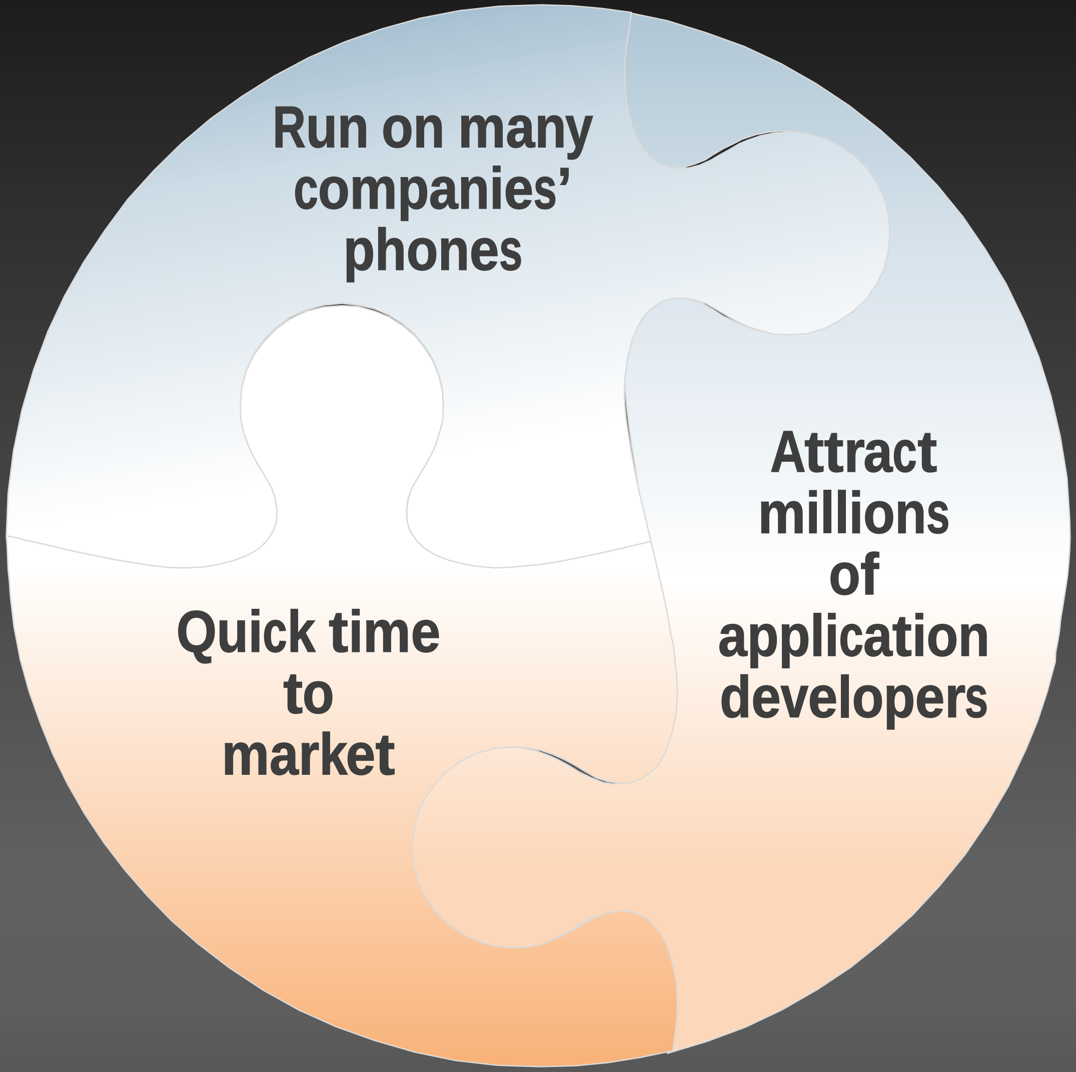
Emergence Of Smartphones Worried Google

Google Acquired Android Inc. To Distribute Mobile Software Technology

Google’s Requirements For Android



Run on many companies’ phones

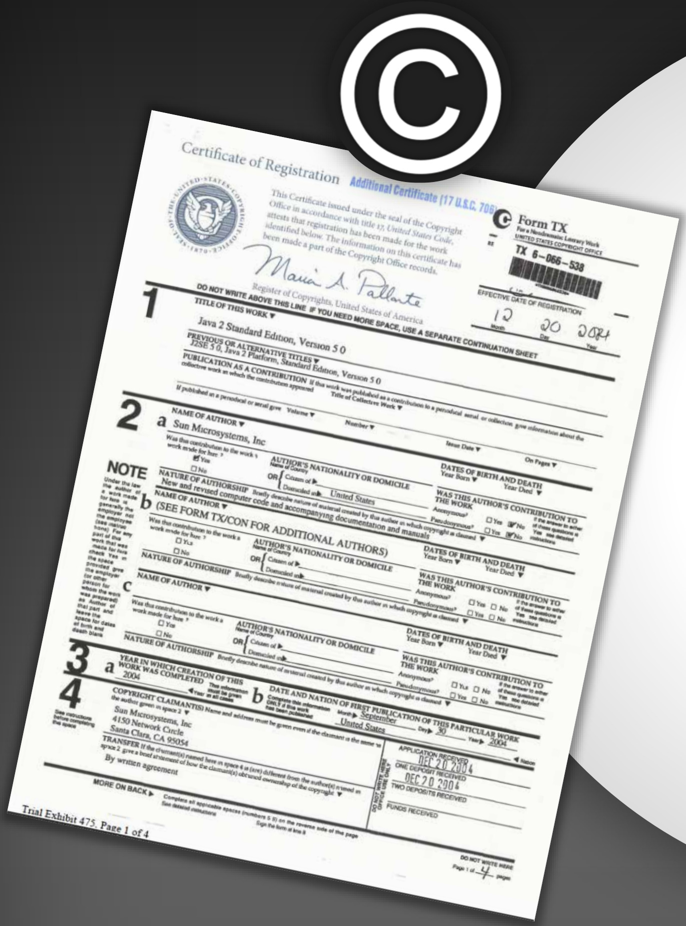
Attract millions of application developers

Quick time to market

Java Technology Met Google’s Requirements For Android

Google Decided To Build Android On Java

But Sun Owned Key Java Copyrights And Patents



Certificate of Registration

Additional Certificate (17 U.S.C. 706)

This Certificate issued under the seal of the Copyright Office in accordance with title 17, United States Code, attests that registration has been made for the work identified below. The information on this certificate has been made a part of the Copyright Office records.

Maria A. Pallante

Register of Copyrights, United States of America

Form TX
For a Nondramatic Literary Work
UNITED STATES COPYRIGHT OFFICE

TX 6-066-538

EFFECTIVE DATE OF REGISTRATION
12 20 2004
Month Day Year

DO NOT WRITE ABOVE THIS LINE. IF YOU NEED MORE SPACE, USE A SEPARATE CONTINUATION SHEET

1 TITLE OF THIS WORK ▼
Java 2 Standard Edition, Version 5 0

PREVIOUS OR ALTERNATIVE TITLES ▼
J2SE 5 0, Java 2 Platform, Standard Edition, Version 5 0

PUBLICATION AS A CONTRIBUTION If this work was published as a contribution to a periodical, serial, or collection, give information about the collective work in which the contribution appeared. Title of Collective Work ▼

If published in a periodical or serial give: Volume ▼ Number ▼ Issue Date ▼ On Pages ▼

2 a NAME OF AUTHOR ▼
Sun Microsystems, Inc

DATES OF BIRTH AND DEATH Year Born ▼ Year Died ▼

Was this contribution to the work a "work made for hire"?
☑ Yes
□ No

AUTHOR'S NATIONALITY OR DOMICILE
Name of Country
OR { Citizen of ▶
Domiciled in ▶ United States

WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK
Anonymous? □ Yes ☑ No
Pseudonymous? □ Yes ☑ No
If the answer to either of these questions is "Yes," see detailed instructions.

NATURE OF AUTHORSHIP Briefly describe nature of material created by this author in which copyright is claimed. ▼
New and revised computer code and accompanying documentation and manuals

NOTE
Under the law, the "author" of a "work made for hire" is generally the employer, not the employee (see instructions). For any part of this work that was "made for hire" check "Yes" in the space provided, give the employer (or other person for whom the work was prepared) as "Author" of that part, and leave the space for dates of birth and death blank.

b NAME OF AUTHOR ▼
(SEE FORM TX/CON FOR ADDITIONAL AUTHORS)

DATES OF BIRTH AND DEATH Year Born ▼ Year Died ▼

Was this contribution to the work a "work made for hire"?
□ Yes
□ No

AUTHOR'S NATIONALITY OR DOMICILE
Name of Country
OR { Citizen of ▶
Domiciled in ▶

WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK
Anonymous? □ Yes □ No
Pseudonymous? □ Yes □ No
If the answer to either of these questions is "Yes," see detailed instructions.

NATURE OF AUTHORSHIP Briefly describe nature of material created by this author in which copyright is claimed. ▼

c NAME OF AUTHOR ▼

DATES OF BIRTH AND DEATH Year Born ▼ Year Died ▼

Was this contribution to the work a "work made for hire"?
□ Yes
□ No

AUTHOR'S NATIONALITY OR DOMICILE
Name of Country
OR { Citizen of ▶
Domiciled in ▶

WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK
Anonymous? □ Yes □ No
Pseudonymous? □ Yes □ No
If the answer to either of these questions is "Yes," see detailed instructions.

NATURE OF AUTHORSHIP Briefly describe nature of material created by this author in which copyright is claimed. ▼

3 a YEAR IN WHICH CREATION OF THIS WORK WAS COMPLETED
2004
◀ Year This information must be given in all cases.

b DATE AND NATION OF FIRST PUBLICATION OF THIS PARTICULAR WORK
Complete this information ONLY if this work has been published.
Month ▶ September Day ▶ 30 Year ▶ 2004
United States ◀ Nation

4 COPYRIGHT CLAIMANT(S) Name and address must be given even if the claimant is the same as the author given in space 2 ▼
Sun Microsystems, Inc
4150 Network Circle
Santa Clara, CA 95054

See instructions before completing this space.

APPLICATION RECEIVED
DEC 20 2004
ONE DEPOSIT RECEIVED
DEC 20 2004
TWO DEPOSITS RECEIVED
FUNDS RECEIVED

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TRANSFER If the claimant(s) named here in space 4 is (are) different from the author(s) named in space 2, give a brief statement of how the claimant(s) obtained ownership of the copyright. ▼
By written agreement

MORE ON BACK ▶ • Complete all applicable spaces (numbers 5-9) on the reverse side of this page. • See detailed instructions. • Sign the form at line 8.

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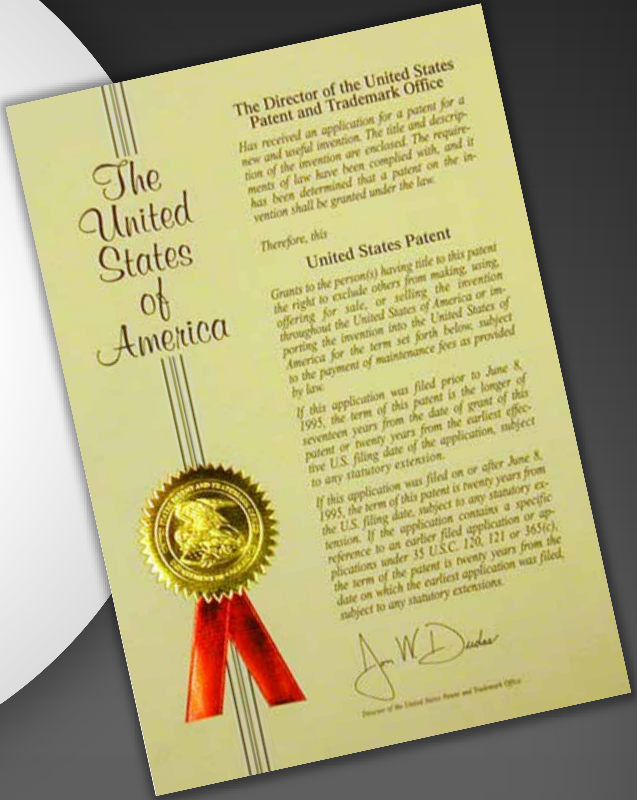
Page 1 of 4 pages

Trial Exhibit 475, Page 1 of 4

Java™



The United States of America

The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

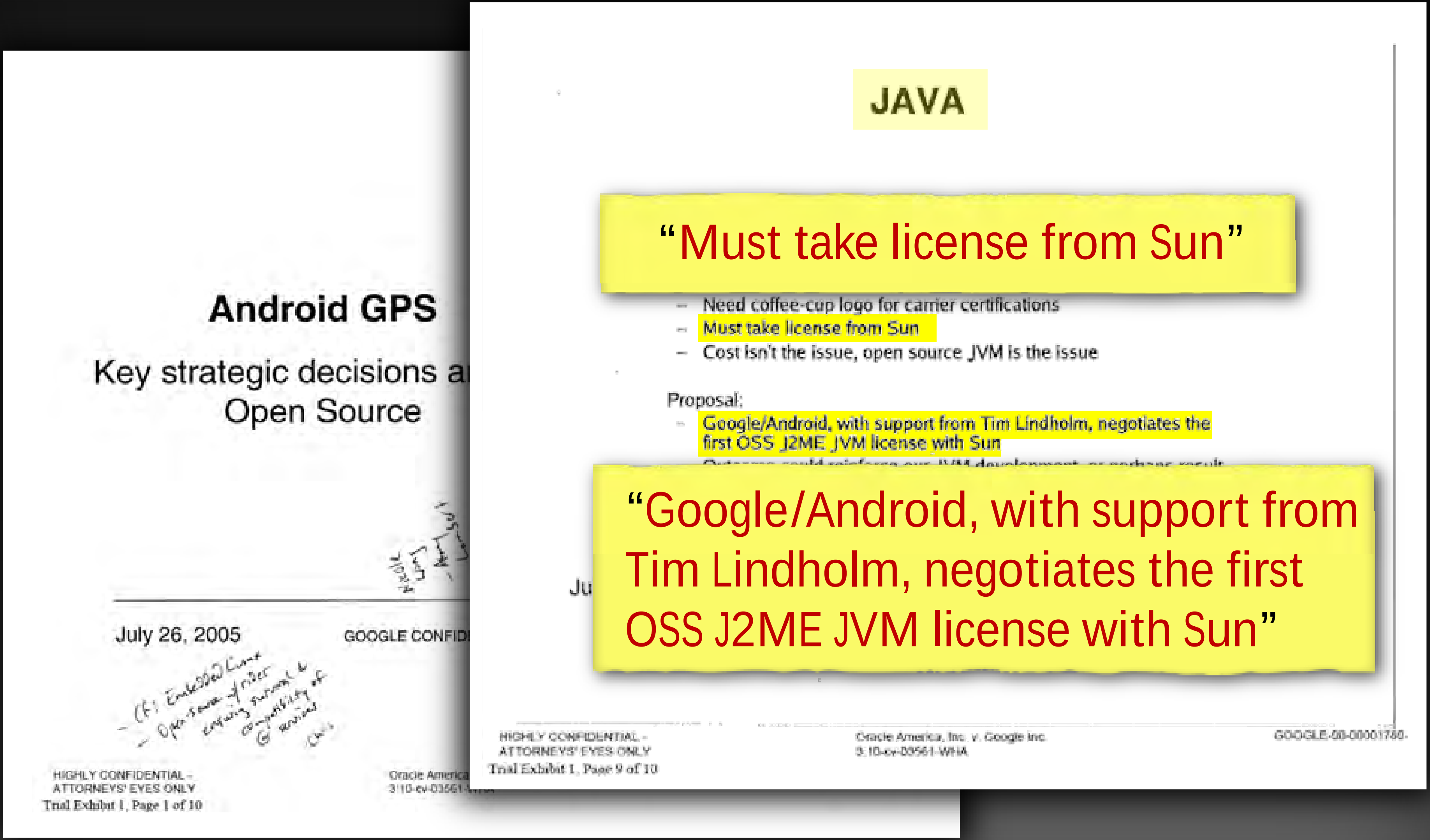
If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extensions.

Jon W. Dudas

Director of the United States Patent and Trademark Office

Google Recognized It Must Take A Java License



Android GPS

Key strategic decisions a

Open Source

July 26, 2005

GOOGLE CONFID

- (A) Embedded Linux
- Open-source of rider ensuring survival & compatibility of G services

(Chris)

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ATTORNEYS' EYES ONLY
Trial Exhibit 1, Page 1 of 10

Oracle America
3:10-cv-03561-

JAVA

"Must take license from Sun"

- Need coffee-cup logo for carrier certifications
- Must take license from Sun
- Cost isn't the issue, open source JVM is the issue

Proposal:

- Google/Android, with support from Tim Lindholm, negotiates the first OSS J2ME JVM license with Sun
- Outcome could reinforce our JVM development, or perhaps result

Ju

"Google/Android, with support from Tim Lindholm, negotiates the first OSS J2ME JVM license with Sun"

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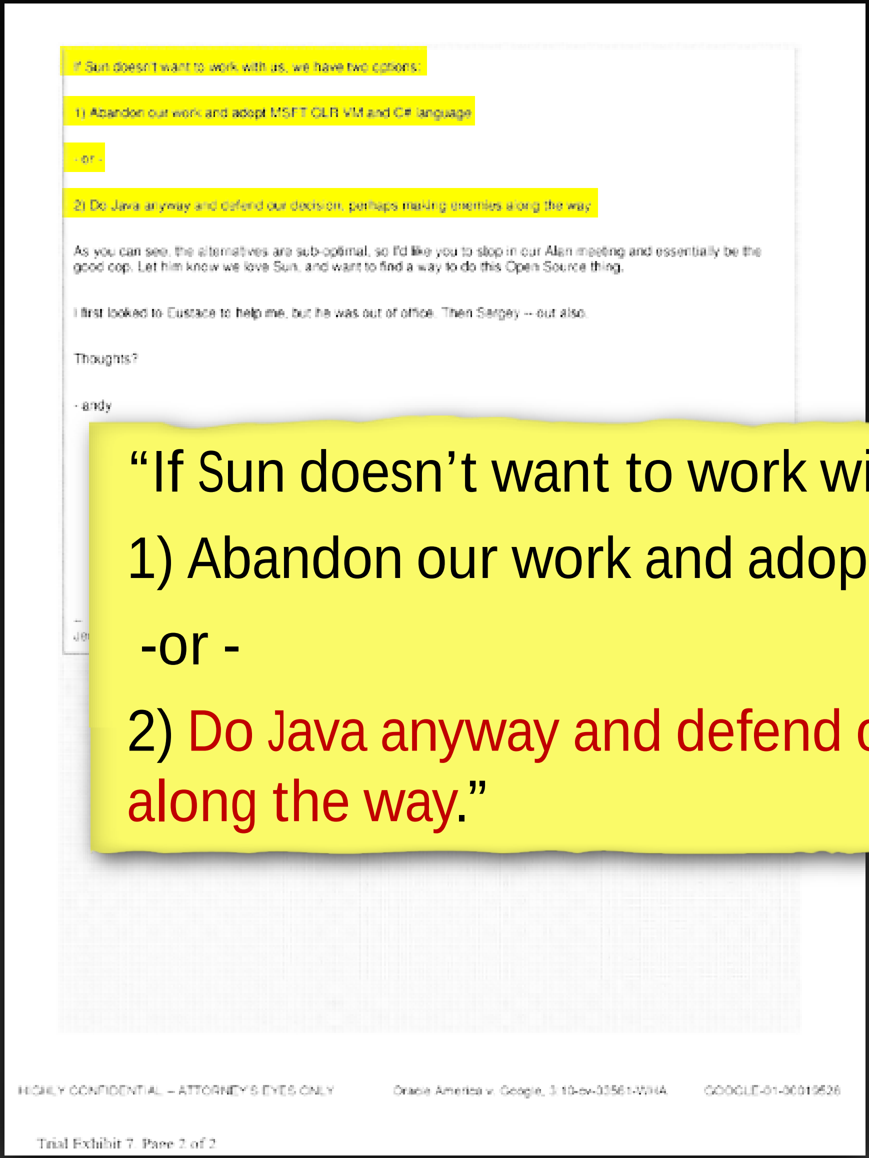
ATTORNEYS' EYES ONLY
Trial Exhibit 1, Page 9 of 10

Oracle America, Inc. v. Google Inc.
3:10-cv-03561-WHA

GOOGLE-00-00001780-

TX 1 at GOOGLE-00-00001780

Google Chose A Path Leading To This Day



If Sun doesn't want to work with us, we have two options:

1) Abandon our work and adopt MSFT CLR VM and C# language

- or -

2) Do Java anyway and defend our decision, perhaps making enemies along the way

As you can see, the alternatives are sub-optimal, so I'd like you to stop in our Alan meeting and essentially be the good cop. Let him know we love Sun, and want to find a way to do this Open Source thing.

I first looked to Eustace to help me, but he was out of office. Then Sergey -- out also.

Thoughts?

- andy

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Trial Exhibit 7, Page 2 of 2

From: Andy Rubin

To: Larry Page

Sent: October 11, 2005

"If Sun doesn't want to work with us, we have two options:

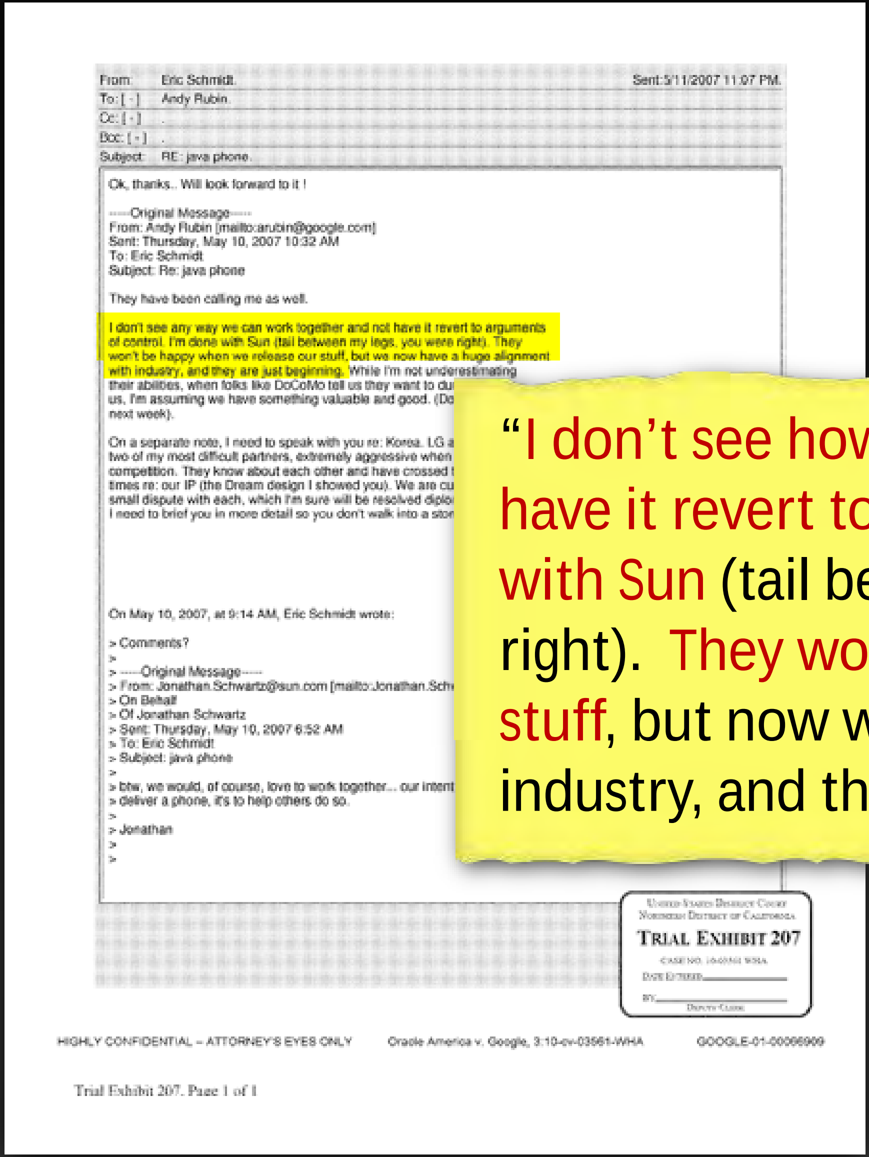
1) Abandon our work and adopt MSFT CLR VM and C# language

-or -

2) Do Java anyway and defend our decision, perhaps making enemies along the way."

TX 7 at GOOGLE-01-00019528

Google, Unwilling To Share Control With Sun, Decided To Release Android Without Licensing Sun's Java IP



From: Eric Schmidt. Sent:5/11/2007 11:07 PM.
To: [-] Andy Rubin.
Cc: [-] .
Bcc: [-] .
Subject: RE: java phone.

Ok, thanks.. Will look forward to it !

-----Original Message-----
From: Andy Rubin [mailto:arubin@google.com]
Sent: Thursday, May 10, 2007 10:32 AM
To: Eric Schmidt
Subject: Re: java phone

They have been calling me as well.

I don't see any way we can work together and not have it revert to arguments of control. I'm done with Sun (tail between my legs, you were right). They won't be happy when we release our stuff, but we now have a huge alignment with industry, and they are just beginning. While I'm not underestimating their abilities, when folks like DoCoMo tell us they want to du
us, I'm assuming we have something valuable and good. (Do
next week).

On a separate note, I need to speak with you re: Korea. LG a
two of my most difficult partners, extremely aggressive when
competition. They know about each other and have crossed
times re: our IP (the Dream design I showed you). We are cu
small dispute with each, which I'm sure will be resolved diplo
I need to brief you in more detail so you don't walk into a stor

On May 10, 2007, at 9:14 AM, Eric Schmidt wrote:

> Comments?
>
> -----Original Message-----
> From: Jonathan.Schwartz@sun.com [mailto:Jonathan.Schw
> On Behalf
> Of Jonathan Schwartz
> Sent: Thursday, May 10, 2007 6:52 AM
> To: Eric Schmidt
> Subject: java phone
>
> btw, we would, of course, love to work together... our intent
> deliver a phone, it's to help others do so.
>
> Jonathan
>
>

United States District Court
Northern District of California
TRIAL EXHIBIT 207
CASE NO. 10-03561 WHA
DATE ENTERED ______
BY ______
Deputy Clerk

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Trial Exhibit 207. Page 1 of 1

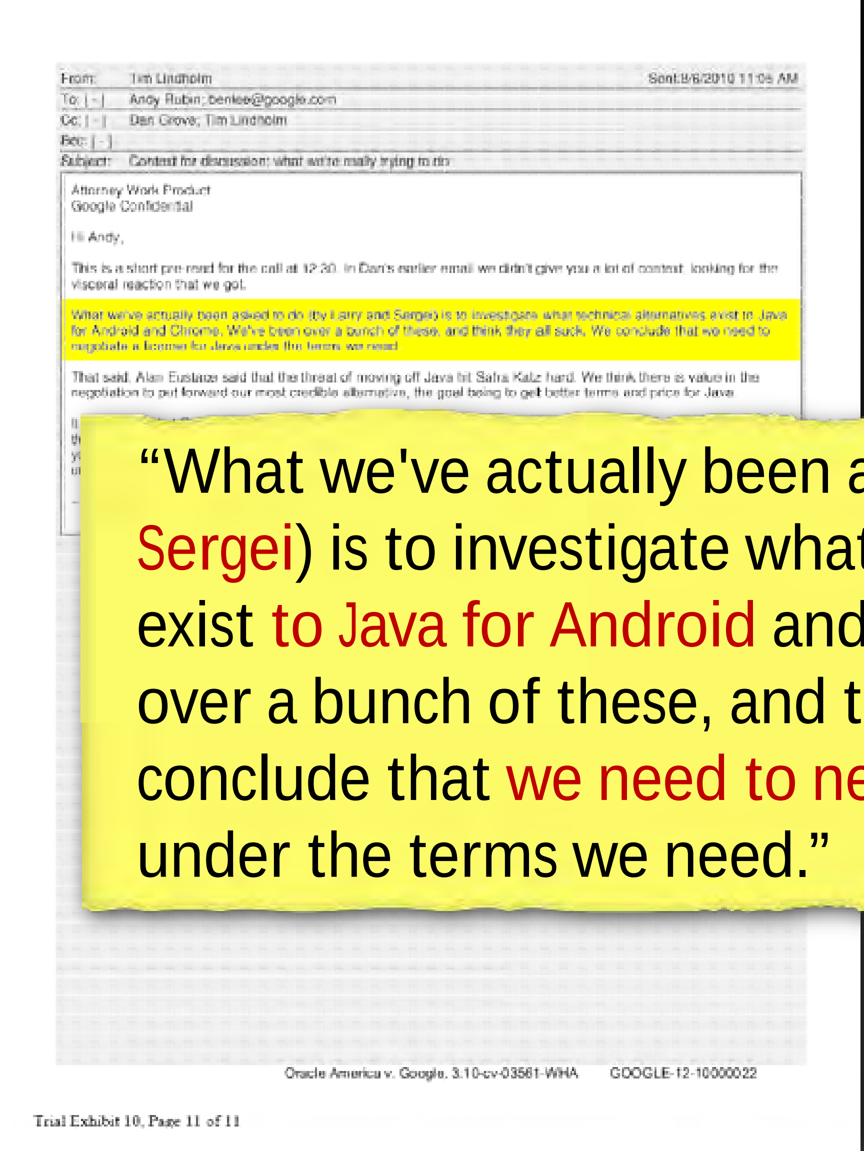
From: Andy Rubin
To: Eric Schmidt
Sent: May 11, 2007

"I don't see how we can work together and not have it revert to arguments of control. I'm done with Sun (tail between my legs, you were right). They won't be happy when we release our stuff, but now we have a huge alignment with industry, and they are just beginning."

TX 207 at GOOGLE-01-00066909

Years Later, Google Still Needs Java Technology And A Java License

From: Tim Lindholm
To: Andy Rubin
Sent: August 6, 2010



From: Tim Lindholm Sent:8/6/2010 11:05 AM
To: [-] Andy Rubin; benlee@google.com
Cc: [-] Dan Grove; Tim Lindholm
Bcc: [-]
Subject: Context for discussion: what we're really trying to do

Attorney Work Product
Google Confidential

Hi Andy,

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Oracle America v. Google, 3:10-cv-03561-WHA GOOGLE-12-10000022

Trial Exhibit 10, Page 11 of 11

> “What we've actually been asked to do (by Larry and Sergei) is to investigate what technical alternatives exist to Java for Android and Chrome. We've been over a bunch of these, and think they all suck. We conclude that we need to negotiate a license for Java under the terms we need.”

TX 10 at GOOGLE-12-10000022

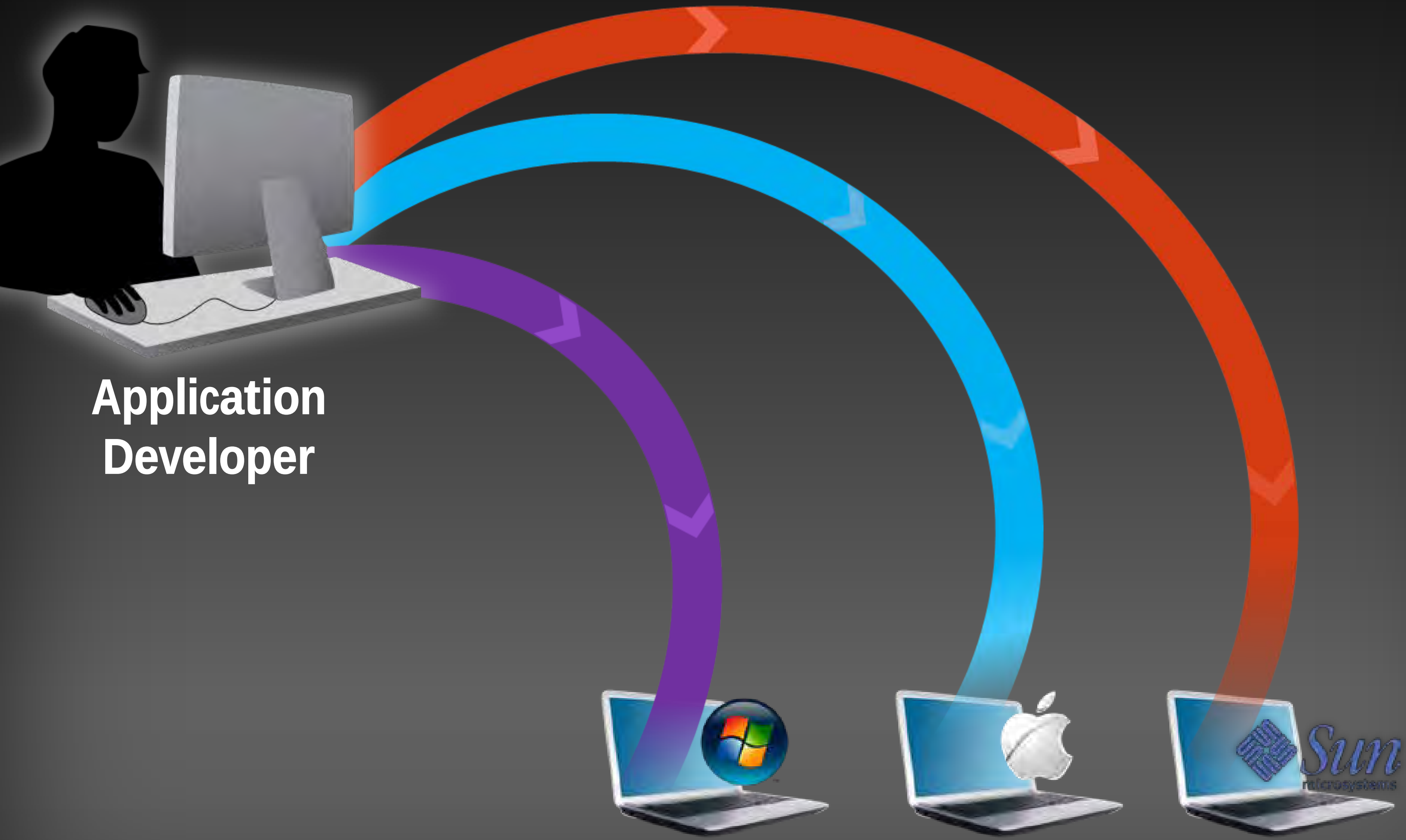
Java Technology and Licensing

Google’s Need for Java Technology and License

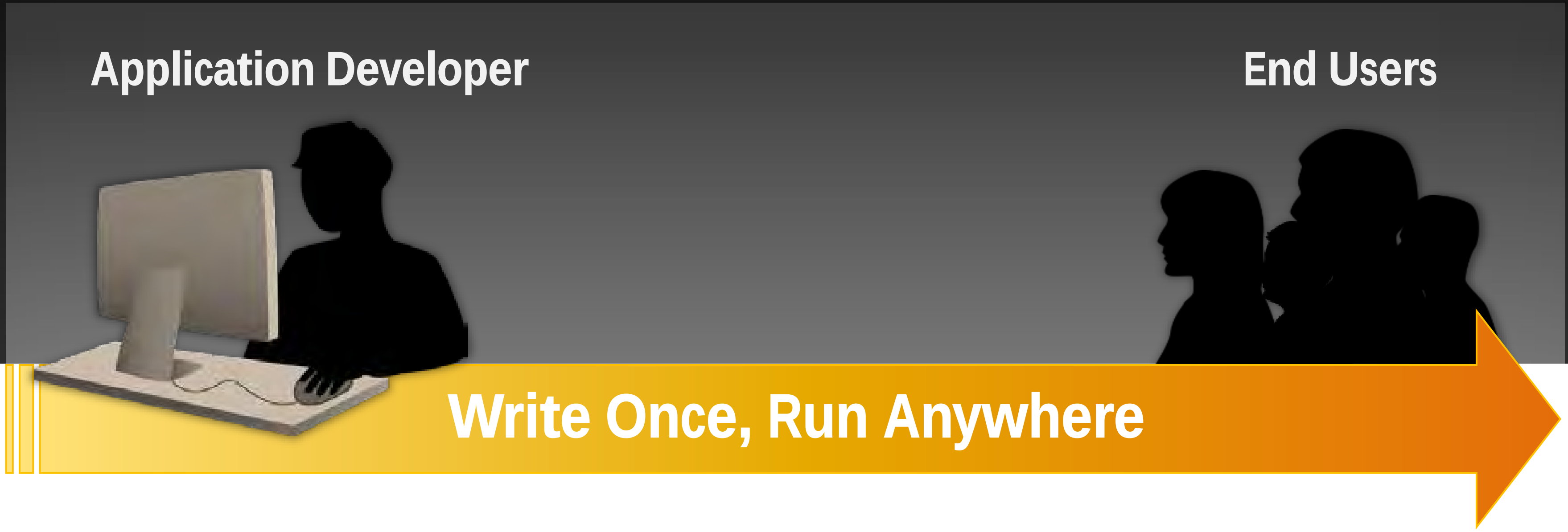
Google’s Infringement

What We Will Prove

Traditional Approach: Develop Application For Each Type Of Computer



Java Tackled New Challenges With Rise Of Internet



Application Developer

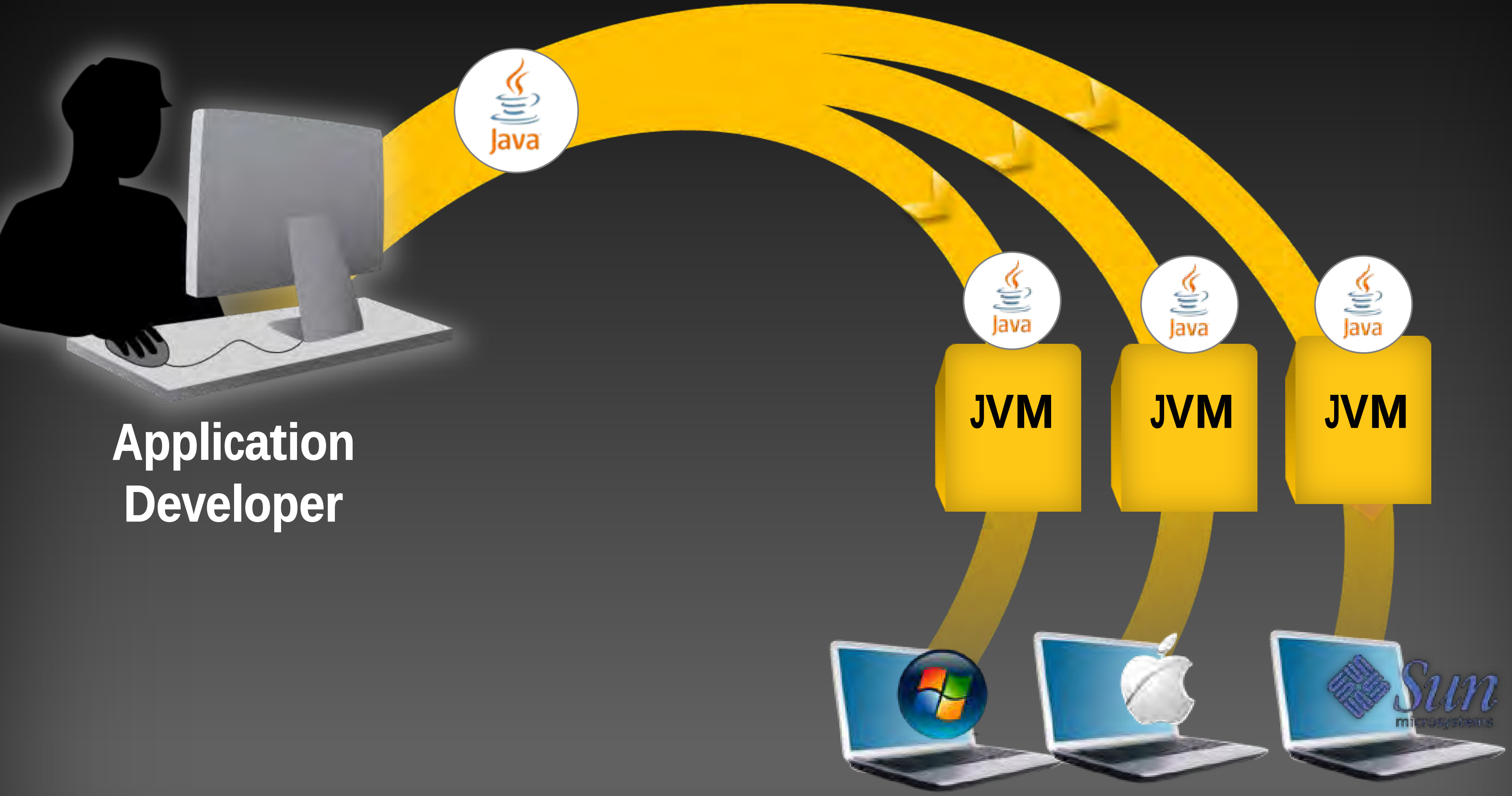
End Users

Write Once, Run Anywhere

- **Write** application **once**
- In Java

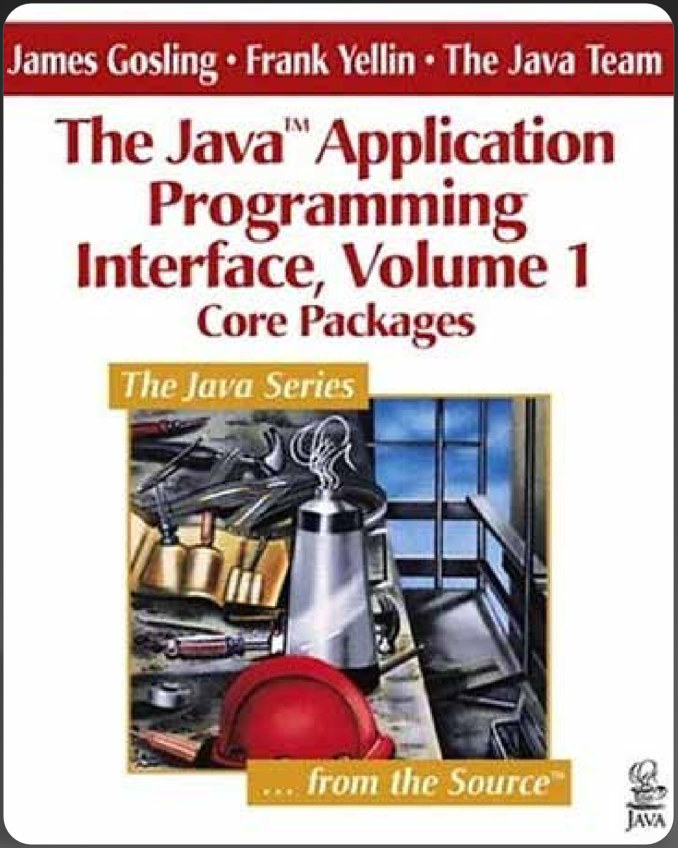
- **Run** application on **any** computer
- Using Java Virtual Machine

Java Solution: Write Once, Run Anywhere



Java’s Consistency Is Critical

Sun Created Java APIs And Class Libraries To Attract Application Developers


James Gosling • Frank Yellin • The Java Team
The Java™ Application Programming Interface, Volume 1
Core Packages
The Java Series
... from the Source™
JAVA

- Java APIs and Class Libraries save developers from having to write program components from scratch

- Java APIs are blueprints for **pre-written** program components

- Java Class Libraries are the **pre-written** program components

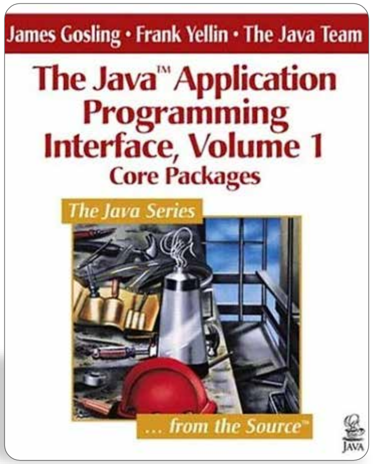
Java APIs And Class Libraries Speed And Ease Software Development

Application Developer

End Users

Write Once, Run Anywhere

Write applications using Java APIs



James Gosling • Frank Yellin • The Java Team

The Java™ Application Programming Interface, Volume 1

Core Packages

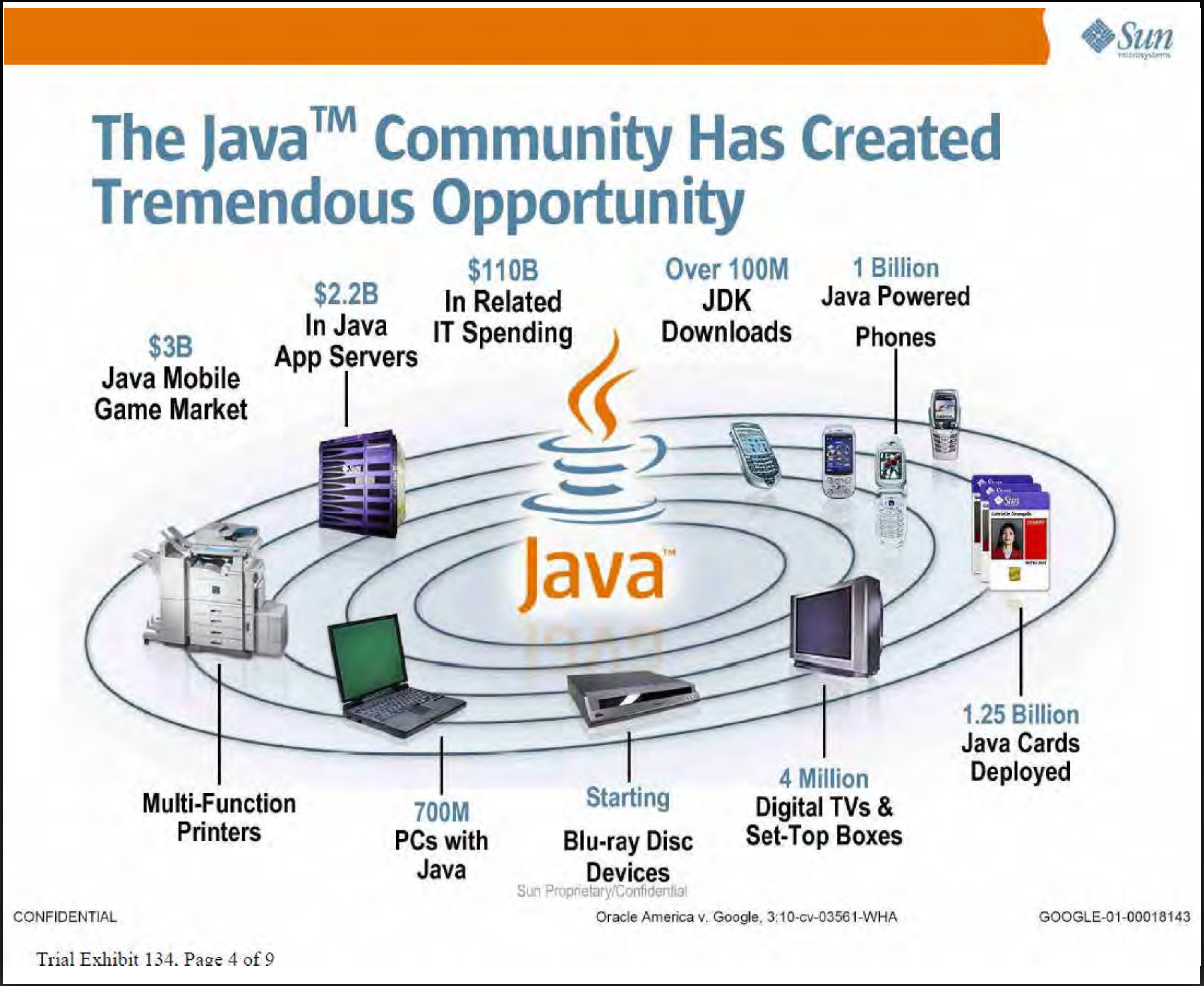
The Java Series

... from the Source™

JAVA

Provide Java Class Libraries based on Java API designs

By 2005, Sun Achieved Widespread Adoption Of Java



The Java™ Community Has Created Tremendous Opportunity

$3B
Java Mobile
Game Market

$2.2B
In Java
App Servers

$110B
In Related
IT Spending

Over 100M
JDK
Downloads

1 Billion
Java Powered
Phones

Multi-Function
Printers

700M
PCs with
Java

Starting
Blu-ray Disc
Devices

4 Million
Digital TVs &
Set-Top Boxes

1.25 Billion
Java Cards
Deployed

Sun Proprietary/Confidential

CONFIDENTIAL

Oracle America v. Google, 3:10-cv-03561-WHA

GOOGLE-01-00018143

Trial Exhibit 134, Page 4 of 9

TX 134 at GOOGLE-01-00018143

To Achieve Widespread Adoption, Sun Offered Many Java Licenses

Example License	Example Licensee
Technology License and Distribution Agreement (TLDA)	IBM, Nokia, WindRiver Systems
Sun Community Source License (SCSL)	Amazon, Hitachi, Motorola, Samsung
Stand Alone TCK (SATCK) License	BEA Systems, Panasonic, RIM, SAP
GPL open source license	Red Hat Inc.

When Is A Java License Necessary?

Write applications in Java programming language □ YES ☑ NO

Provide class libraries based on Java API designs ☑ YES □ NO

Download Java software components ☑ YES □ NO

Google took Java API designs

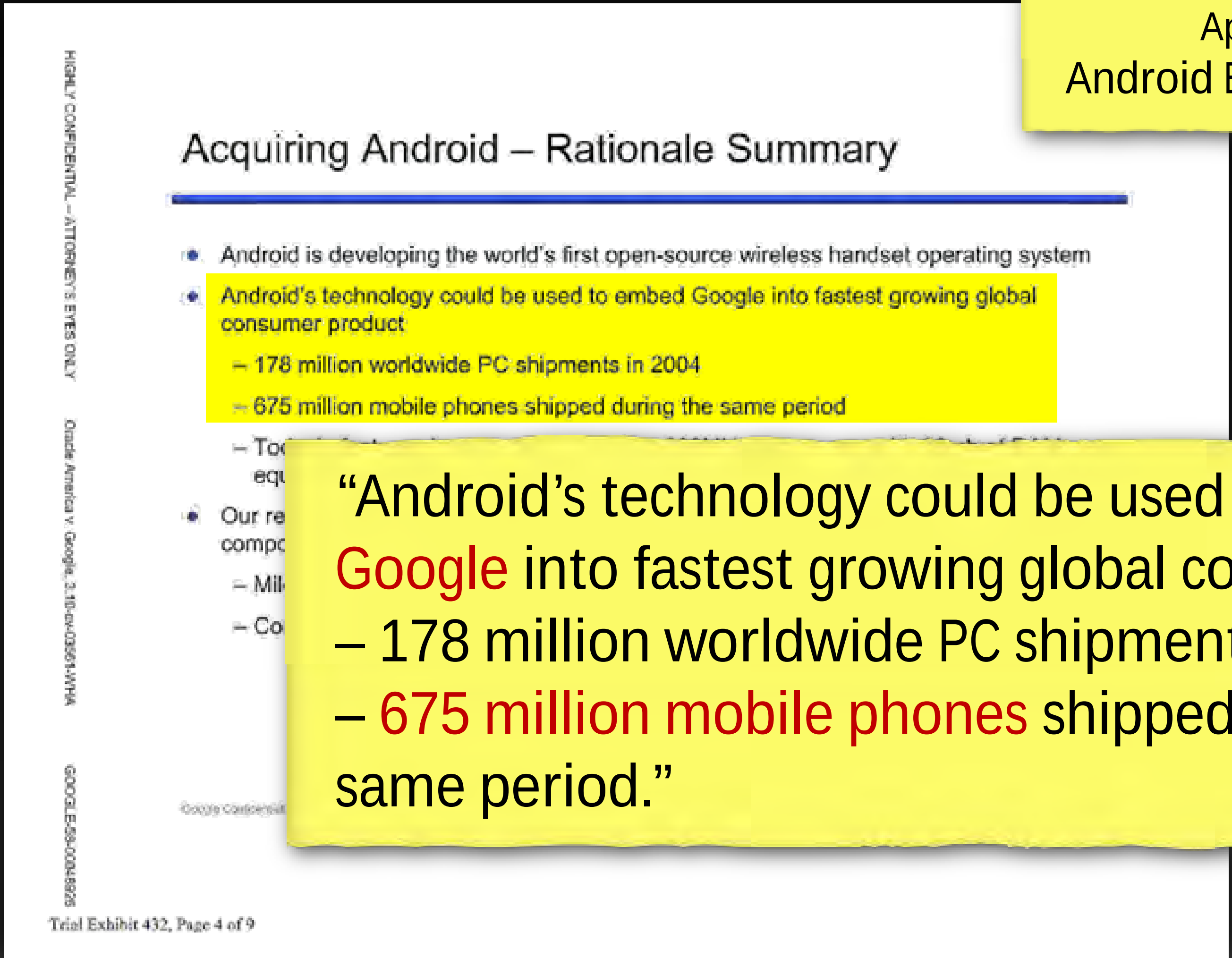
Java Technology and Licensing

Google’s Need for Java Technology and License

Google’s Infringement

What We Will Prove

Google Initiated Android Mobile Strategy In 2005



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Oracle America v. Google, 3:10-cv-03561-WHA

Acquiring Android – Rationale Summary

- Android is developing the world's first open-source wireless handset operating system
- Android's technology could be used to embed Google into fastest growing global consumer product
  - – 178 million worldwide PC shipments in 2004
  - – 675 million mobile phones shipped during the same period
  - – Tod
    equ
- Our re
  compo
  - – Mil
  - – Co

Google Confidential

GOOGLE-58-00048926

Trial Exhibit 432, Page 4 of 9

April 18, 2005
Android EMG M&A Review

"Android's technology could be used to embed Google into fastest growing global consumer product
– 178 million worldwide PC shipments in 2004
– 675 million mobile phones shipped during the same period."

TX 432 at GOOGLE-58-00048926

Google Needed To Enter Mobile Market Quickly

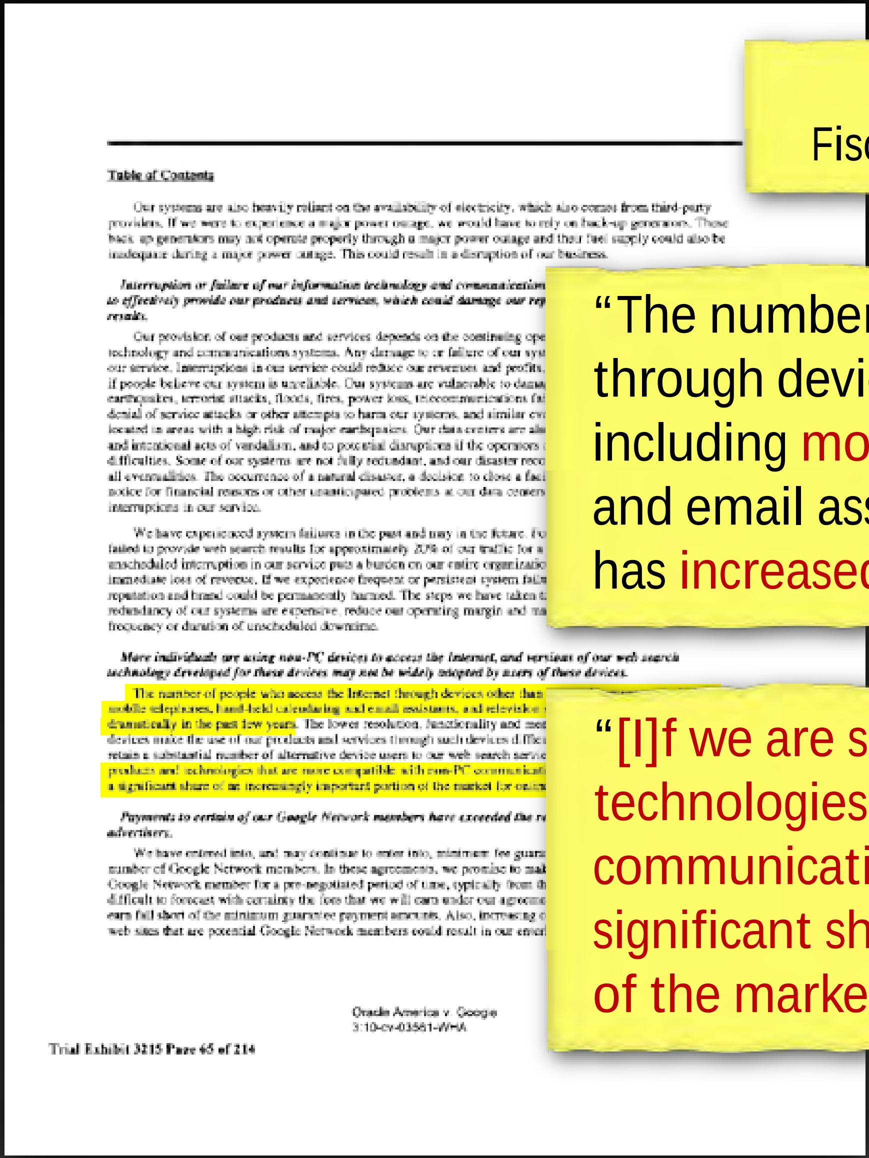


Table of Contents

Our systems are also heavily reliant on the availability of electricity, which also comes from third-party providers. If we were to experience a major power outage, we would have to rely on back-up generators. These back up generators may not operate properly through a major power outage and their fuel supply could also be inadequate during a major power outage. This could result in a disruption of our business.

Interruption or failure of our information technology and communication
to effectively provide our products and services, which could damage our rep
results.

Our provision of our products and services depends on the continuing ope
technology and communications systems. Any damage to or failure of our syst
our service. Interruptions in our service could reduce our revenues and profits,
if people believe our system is unreliable. Our systems are vulnerable to damag
earthquakes, terrorist attacks, floods, fires, power loss, telecommunications fai
denial of service attacks or other attempts to harm our systems, and similar eve
located in areas with a high risk of major earthquakes. Our data centers are als
and intentional acts of vandalism, and to potential disruptions if the operators
difficulties. Some of our systems are not fully redundant, and our disaster reco
all eventualities. The occurrence of a natural disaster, a decision to close a faci
notice for financial reasons or other unanticipated problems at our data centers
interruptions in our service.

We have experienced system failures in the past and may in the future. Fo
failed to provide web search results for approximately 20% of our traffic for a
unscheduled interruption in our service puts a burden on our entire organizatio
immediate loss of revenue. If we experience frequent or persistent system failu
reputation and brand could be permanently harmed. The steps we have taken t
redundancy of our systems are expensive, reduce our operating margin and ma
frequency or duration of unscheduled downtime.

More individuals are using non-PC devices to access the Internet, and versions of our web search technology developed for these devices may not be widely adopted by users of these devices.

The number of people who access the Internet through devices other than
mobile telephones, hand-held calendaring and email assistants, and television
dramatically in the past few years. The lower resolution, functionality and mem
devices make the use of our products and services through such devices diffic
retain a substantial number of alternative device users to our web search servic
products and technologies that are more compatible with non-PC communicati
a significant share of an increasingly important portion of the market for onlin

Payments to certain of our Google Network members have exceeded the re
advertisers.

We have entered into, and may continue to enter into, minimum fee guara
number of Google Network members. In these agreements, we promise to mak
Google Network member for a pre-negotiated period of time, typically from th
difficult to forecast with certainty the fees that we will earn under our agreeme
earn fall short of the minimum guarantee payment amounts. Also, increasing c
web sites that are potential Google Network members could result in our enterl

Oracle America v. Google
3:10-cv-03561-WHA

Trial Exhibit 3215 Page 65 of 214

Google's 10-K

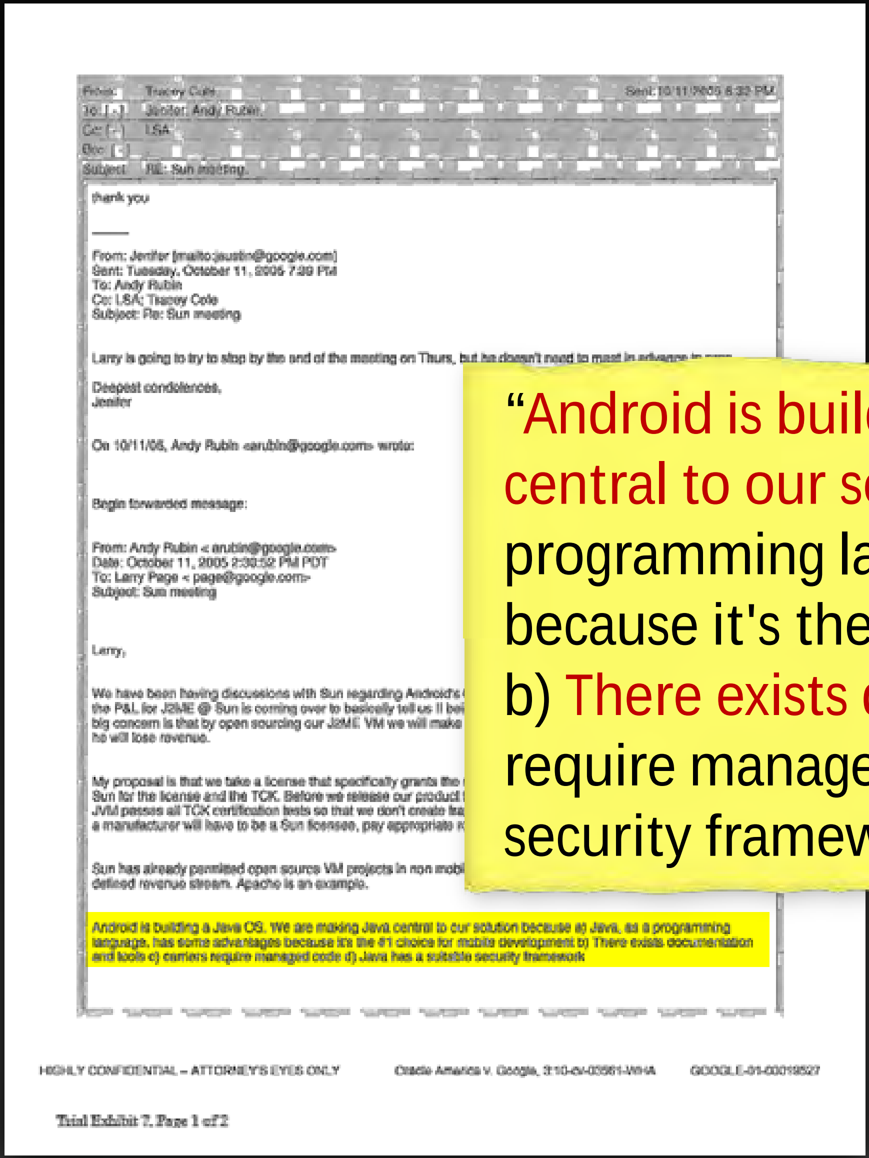
Fiscal Year Ended December 31, 2005

"The number of people who access the Internet through devices other than personal computers, including mobile telephones, hand-held calendaring and email assistants, and television set-top devices, has increased dramatically in the past few years."

"[I]f we are slow to develop products and technologies that are more compatible with non-PC communications devices, we will fail to capture a significant share of an increasingly important portion of the market for online services."

TX 3215 at GOOGLE-03170076

Google Decided To Make Java Central To Android



From: Tracey Cole Sent: 10/11/2005 8:32 PM
To: [-] Jenifer; Andy Rubin;
Cc: [-] LSA
Bcc: [-]
Subject: RE: Sun meeting.

thank you

———

From: Jenifer [mailto:jaustin@google.com]
Sent: Tuesday, October 11, 2005 7:39 PM
To: Andy Rubin
Cc: LSA; Tracey Cole
Subject: Re: Sun meeting

Larry is going to try to stop by the end of the meeting on Thurs, but he doesn't need to meet in advance in case

Deepest condolences,
Jenifer

On 10/11/05, Andy Rubin <arubin@google.com> wrote:

Begin forwarded message:

From: Andy Rubin < arubin@google.com>
Date: October 11, 2005 2:30:52 PM PDT
To: Larry Page < page@google.com>
Subject: Sun meeting

Larry,

We have been having discussions with Sun regarding Android's
the P&L for J2ME @ Sun is coming over to basically tell us ll be
big concern is that by open sourcing our J2ME VM we will make
he will lose revenue.

My proposal is that we take a license that specifically grants the
Sun for the license and the TCK. Before we release our product
JVM passes all TCK certification tests so that we don't create fra
a manufacturer will have to be a Sun licensee, pay appropriate r

Sun has already permitted open source VM projects in non mobi
defined revenue stream. Apache is an example.

Android is building a Java OS. We are making Java central to our solution because a) Java, as a programming language, has some advantages because it's the #1 choice for mobile development b) There exists documentation and tools c) carriers require managed code d) Java has a suitable security framework

HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY Oracle America v. Google, 3:10-cv-03561-WHA GOOGLE-01-00019527

Trial Exhibit 7, Page 1 of 2

TX 7 at GOOGLE-01-00019527

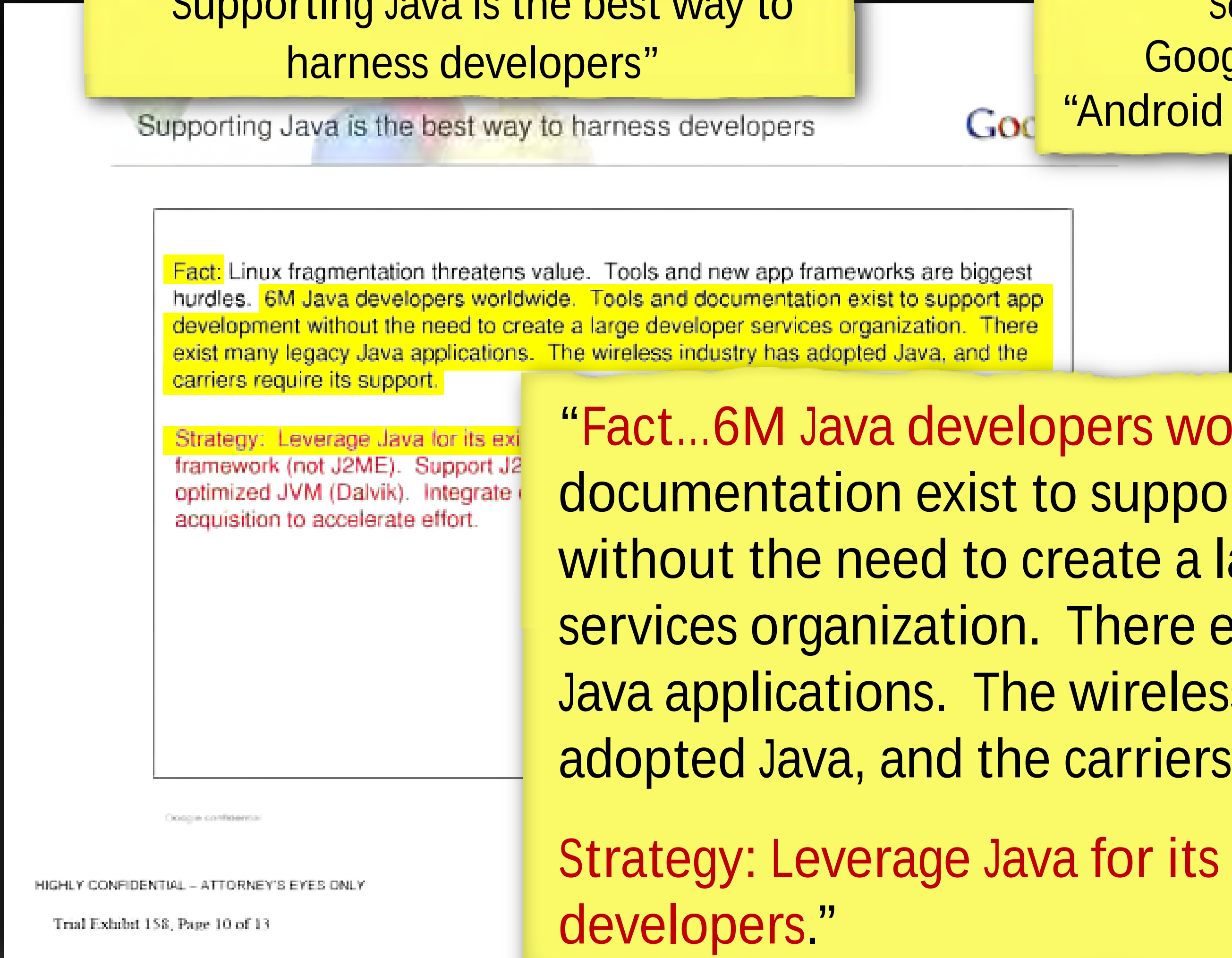
From: Andy Rubin
To: Larry Page
Sent: October 11, 2005

"Android is building a Java OS. We are making Java central to our solution because a) Java, as a programming language, has some advantages because it's the #1 choice for mobile development b) There exists documentation and tools c) carriers require managed code d) Java has a suitable security framework."

Google Knew Adopting Java Would Attract Developers To Android

"Supporting Java is the best way to harness developers"

September 28, 2006
Google's Presentation on
"Android Open Handset Platform"



Supporting Java is the best way to harness developers

Goo

Fact: Linux fragmentation threatens value. Tools and new app frameworks are biggest hurdles. 6M Java developers worldwide. Tools and documentation exist to support app development without the need to create a large developer services organization. There exist many legacy Java applications. The wireless industry has adopted Java, and the carriers require its support.

Strategy: Leverage Java for its exi
framework (not J2ME). Support J2
optimized JVM (Dalvik). Integrate
acquisition to accelerate effort.

Google confidential

HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY

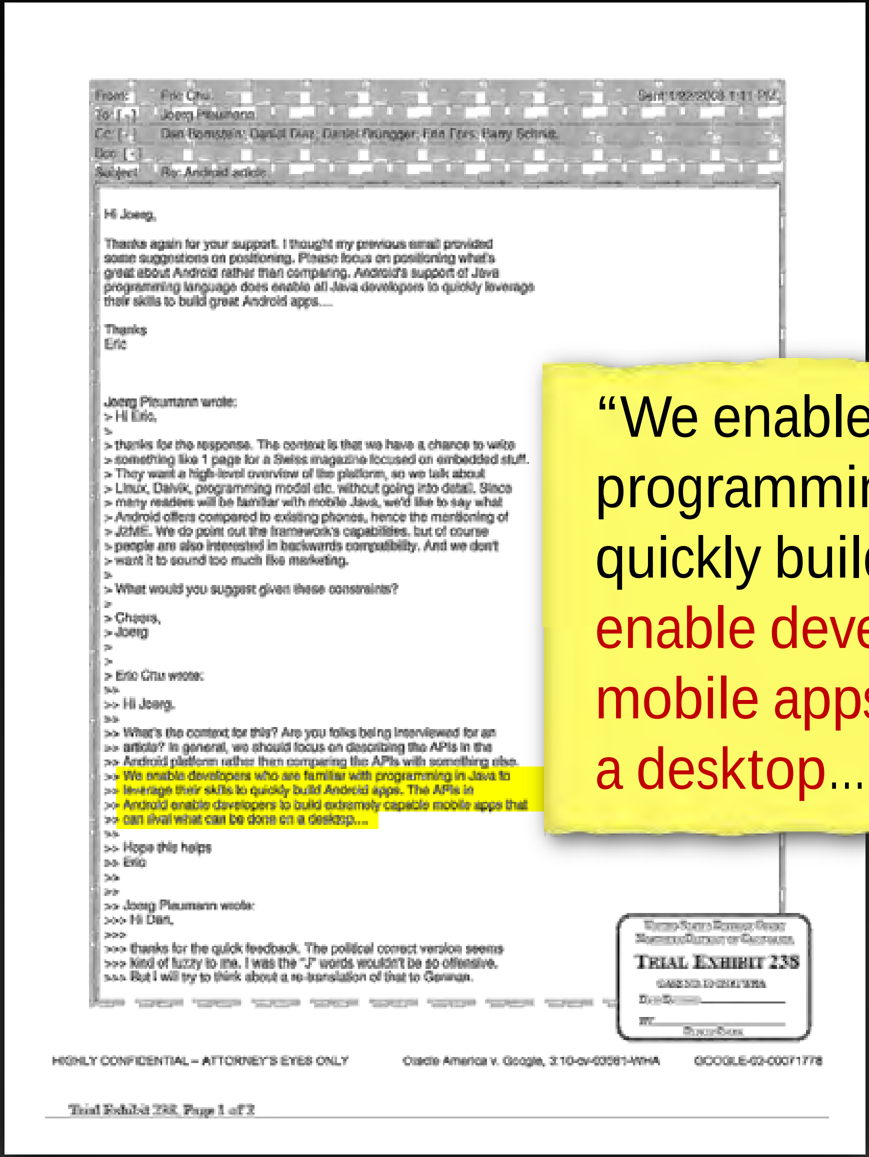
Trial Exhibit 158, Page 10 of 13

"Fact…6M Java developers worldwide. Tools and documentation exist to support app development without the need to create a large developer services organization. There exist many legacy Java applications. The wireless industry has adopted Java, and the carriers require its support.

Strategy: Leverage Java for its existing base of developers."

TX 158 at GOOGLE-01-00025584

Google Copied Java API Designs Because It Wanted To Attract Developers To Android



From: Eric Chu Sent: 1/22/2008 1:11 PM
To: [-] Joerg Pleumann
Cc: [-] Dan Bornstein; Daniel Diaz; Daniel Reungger; Fina Fors; Barry Schnitt
Bcc: [-]
Subject: Re: Android article

Hi Joerg,

Thanks again for your support. I thought my previous email provided some suggestions on positioning. Please focus on positioning what's great about Android rather than comparing. Android's support of Java programming language does enable all Java developers to quickly leverage their skills to build great Android apps....

Thanks
Eric

Joerg Pleumann wrote:
> Hi Eric,
>
> thanks for the response. The context is that we have a chance to write
> something like 1 page for a Swiss magazine focused on embedded stuff.
> They want a high-level overview of the platform, so we talk about
> Linux, Dalvik, programming model etc. without going into detail. Since
> many readers will be familiar with mobile Java, we'd like to say what
> Android offers compared to existing phones, hence the mentioning of
> J2ME. We do point out the framework's capabilities, but of course
> people are also interested in backwards compatibility. And we don't
> want it to sound too much like marketing.
>
> What would you suggest given these constraints?
>
> Cheers,
> Joerg
>
>
> Eric Chu wrote:
>>
>> Hi Joerg,
>>
>> What's the context for this? Are you folks being interviewed for an
>> article? In general, we should focus on describing the APIs in the
>> Android platform rather then comparing the APIs with something else.
>> We enable developers who are familiar with programming in Java to
>> leverage their skills to quickly build Android apps. The APIs in
>> Android enable developers to build extremely capable mobile apps that
>> can rival what can be done on a desktop....
>>
>> Hope this helps
>> Eric
>>
>>
>> Joerg Pleumann wrote:
>>> Hi Dan,
>>>
>>> thanks for the quick feedback. The political correct version seems
>>> kind of fuzzy to me. I was the "J" words wouldn't be so offensive.
>>> But I will try to think about a re-translation of that to German.

United States District Court
Northern District of California
TRIAL EXHIBIT 238
CASE NO. 10-03561 WHA
Date Entered ____________
By ____________
Deputy Clerk

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Trial Exhibit 238, Page 1 of 2

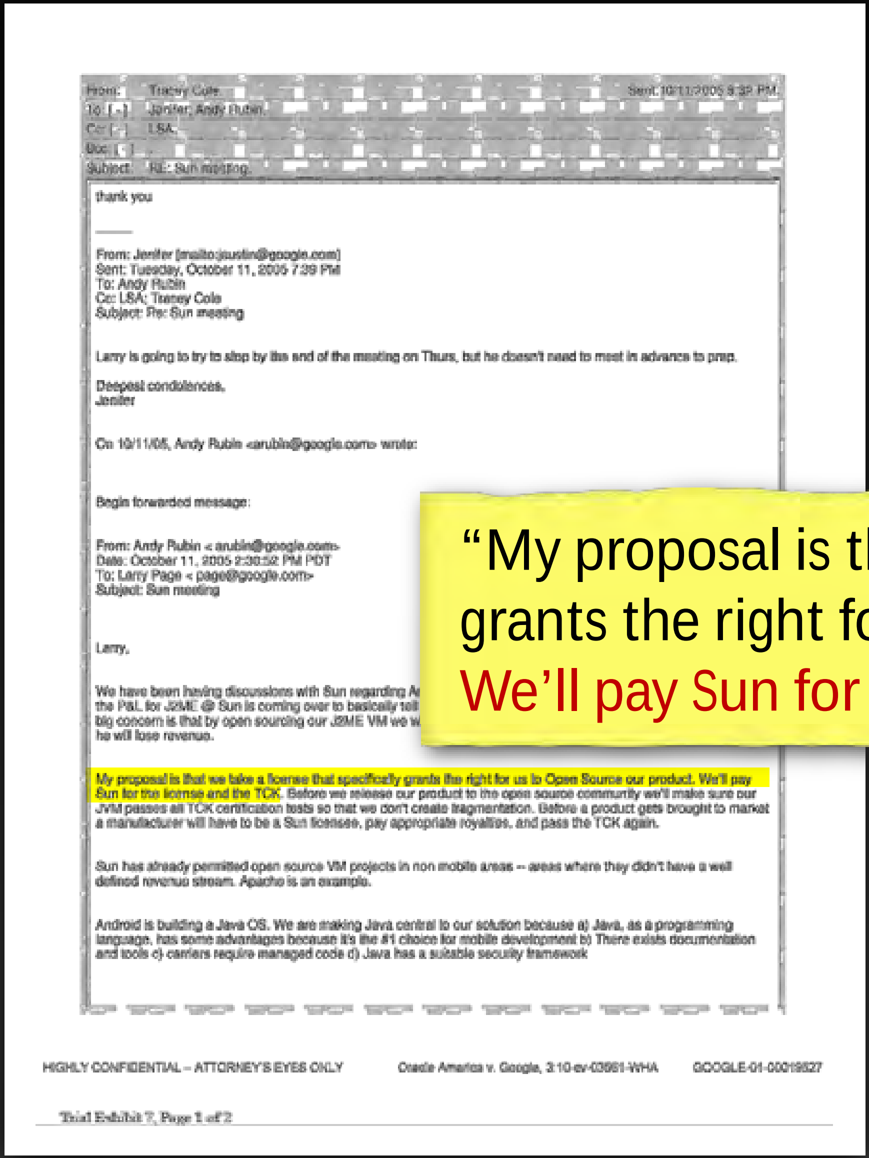
From: Eric Chu
To: Joerg Pleumann
CC: Dan Bornstein
Sent: January 22, 2008

"We enable developers who are familiar with programming in Java to leverage their skills to quickly build Android apps. The APIs in Android enable developers to build extremely capable mobile apps that can rival what can be done on a desktop...."

TX 238 at GOOGLE-02-00071778

Google knew it needed a critical Java license

Google Knew It Needed A Java License



From: Tracey Cole Sent: 10/11/2005 9:32 PM
To: [-] Jenifer; Andy Rubin
Cc: [-] LSA
Bcc: [-]
Subject: RE: Sun meeting

thank you

———

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Sent: Tuesday, October 11, 2005 7:39 PM
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Cc: LSA; Tracey Cole
Subject: Re: Sun meeting

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Deepest condolences,
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Begin forwarded message:

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To: Larry Page < page@google.com>
Subject: Sun meeting

Larry,

We have been having discussions with Sun regarding A
the P&L for J2ME @ Sun is coming over to basically tel
big concern is that by open sourcing our J2ME VM we w
he will lose revenue.

My proposal is that we take a license that specifically grants the right for us to Open Source our product. We'll pay Sun for the license and the TCK. Before we release our product to the open source community we'll make sure our JVM passes all TCK certification tests so that we don't create fragmentation. Before a product gets brought to market a manufacturer will have to be a Sun licensee, pay appropriate royalties, and pass the TCK again.

Sun has already permitted open source VM projects in non mobile areas -- areas where they didn't have a well defined revenue stream. Apache is an example.

Android is building a Java OS. We are making Java central to our solution because a) Java, as a programming language, has some advantages because it's the #1 choice for mobile development b) There exists documentation and tools c) carriers require managed code d) Java has a suitable security framework

HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY Oracle America v. Google, 3:10-cv-03561-WHA GOOGLE-01-00019527

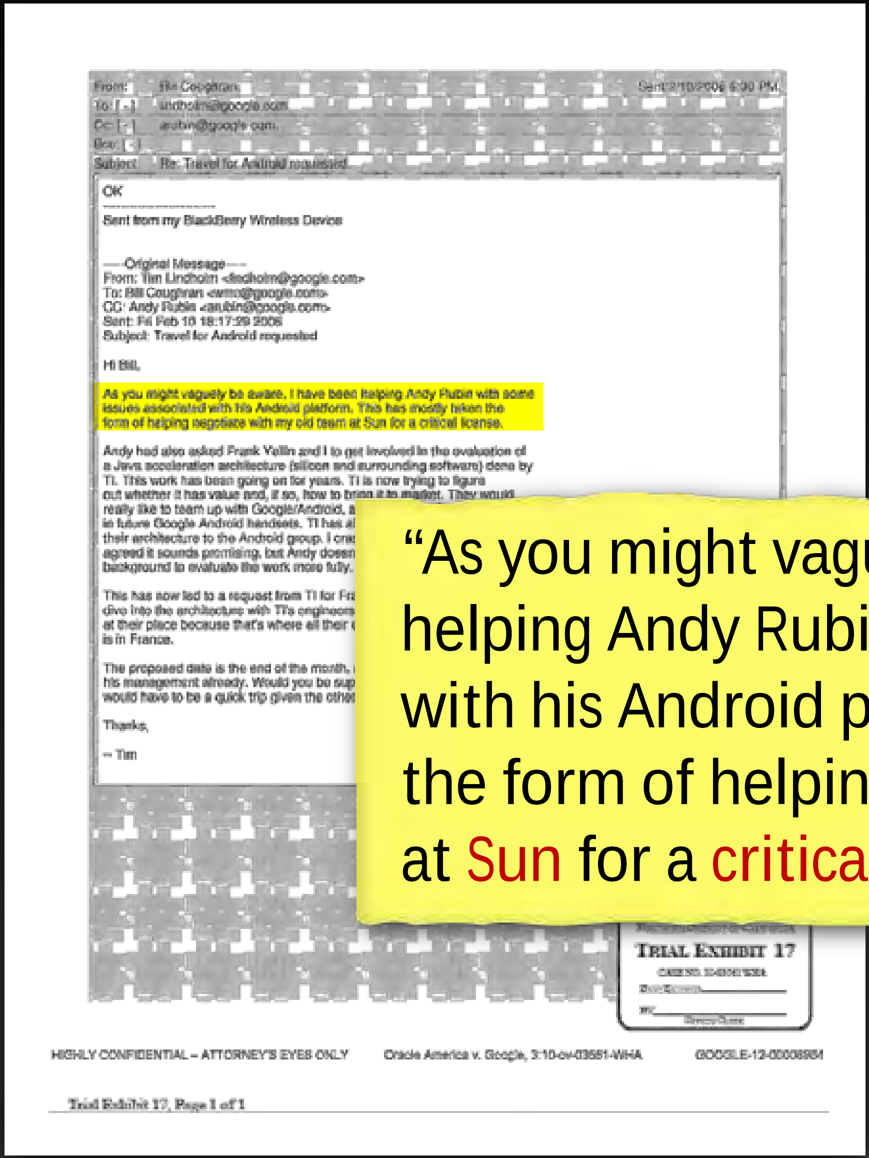
Trial Exhibit 7, Page 1 of 2

TX 7 at GOOGLE-01-00019527

From: Andy Rubin
To: Larry Page
Sent: October 11, 2005

"My proposal is that we take a license that specifically grants the right for us to Open Source our product. We'll pay Sun for the license and the TCK."

Google Knew The License Was Critical



From: Bill Coughran Sent: 2/10/2006 6:30 PM
To: [-] lindholm@google.com
Cc: [-] arubin@google.com
Bcc: [-]
Subject: Re: Travel for Android requested

OK

Sent from my BlackBerry Wireless Device

-----Original Message-----
From: Tim Lindholm <lindholm@google.com>
To: Bill Coughran <wmc@google.com>
CC: Andy Rubin <arubin@google.com>
Sent: Fri Feb 10 18:17:29 2006
Subject: Travel for Android requested

Hi Bill,

As you might vaguely be aware, I have been helping Andy Rubin with some issues associated with his Android platform. This has mostly taken the form of helping negotiate with my old team at Sun for a critical license.

Andy had also asked Frank Yellin and I to get involved in the evaluation of a Java acceleration architecture (silicon and surrounding software) done by TI. This work has been going on for years. TI is now trying to figure out whether it has value and, if so, how to bring it to market. They would really like to team up with Google/Android, a
in future Google Android handsets. TI has al
their architecture to the Android group. I cre
agreed it sounds promising, but Andy doesn
background to evaluate the work more fully.

This has now led to a request from TI for Fra
dive into the architecture with TI's engineeri
at their place because that's where all their
is in France.

The proposed date is the end of the month,
his management already. Would you be sup
would have to be a quick trip given the othe

Thanks,

-- Tim

TRIAL EXHIBIT 17
CASE NO. 10-03561 WHA

HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY Oracle America v. Google, 3:10-cv-03561-WHA GOOGLE-12-00006964

Trial Exhibit 17, Page 1 of 1

From: Tim Lindholm
To: Bill Coughran
CC: Andy Rubin
Sent: February 10, 2006

"As you might vaguely be aware, I have been helping Andy Rubin with some issues associated with his Android platform. This has mostly taken the form of helping negotiate with my old team at Sun for a critical license."

TX 17 at GOOGLE-12-00006964

Google Hired Key Java Business, Licensing, And Technology Employees From Sun

Sun microsystems

Tim Lindholm

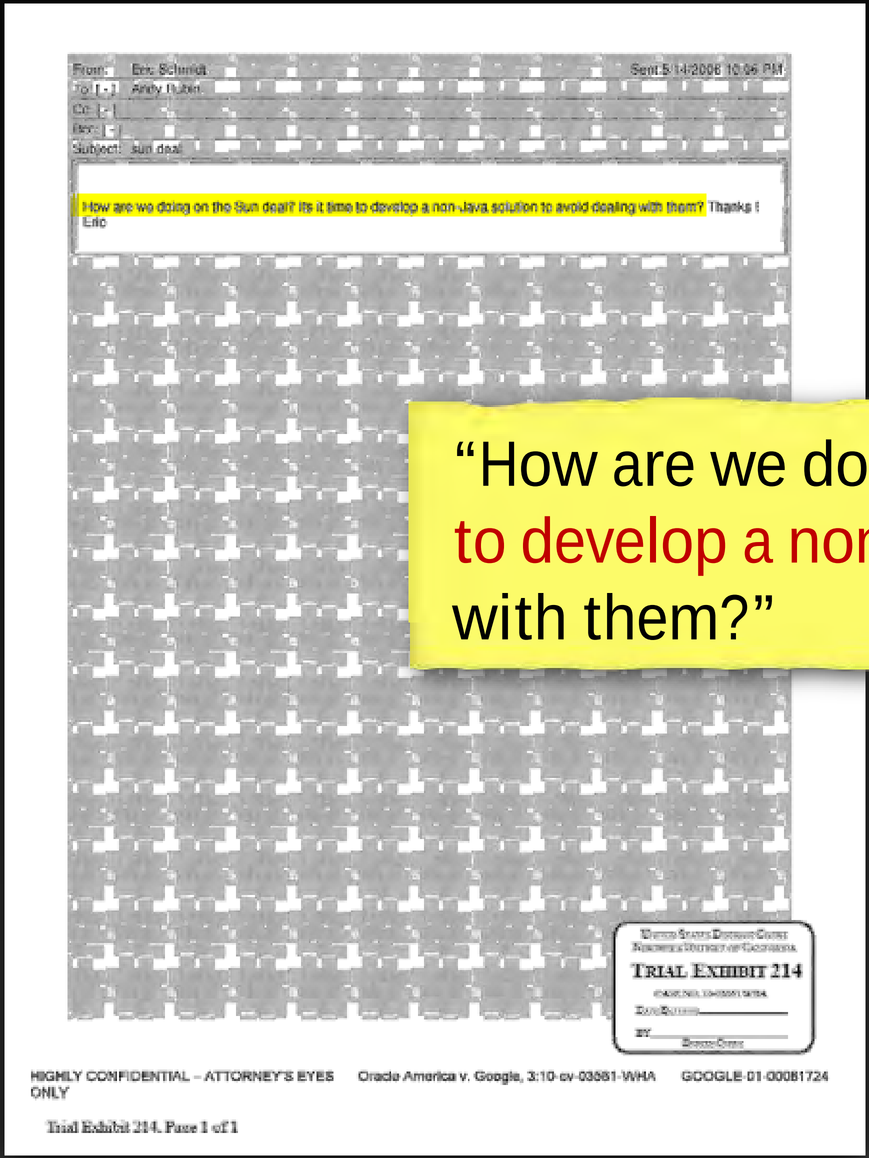
Eric Schmidt

Joshua Bloch

Eric Chu

Google™

Google Knew: No Sun Deal, No Java



From: Eric Schmidt Sent:5/14/2006 10:06 PM
To: [-] Andy Rubin
Cc: [-]
Bcc: [-]
Subject: sun deal

How are we doing on the Sun deal? Its it time to develop a non-Java solution to avoid dealing with them? Thanks !
Eric

United States District Court
Northern District of California
TRIAL EXHIBIT 214
Case No. 10-03561 WHA
Date Entered ____
By ____
Deputy Clerk

HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY Oracle America v. Google, 3:10-cv-03561-WHA GOOGLE-01-00081724

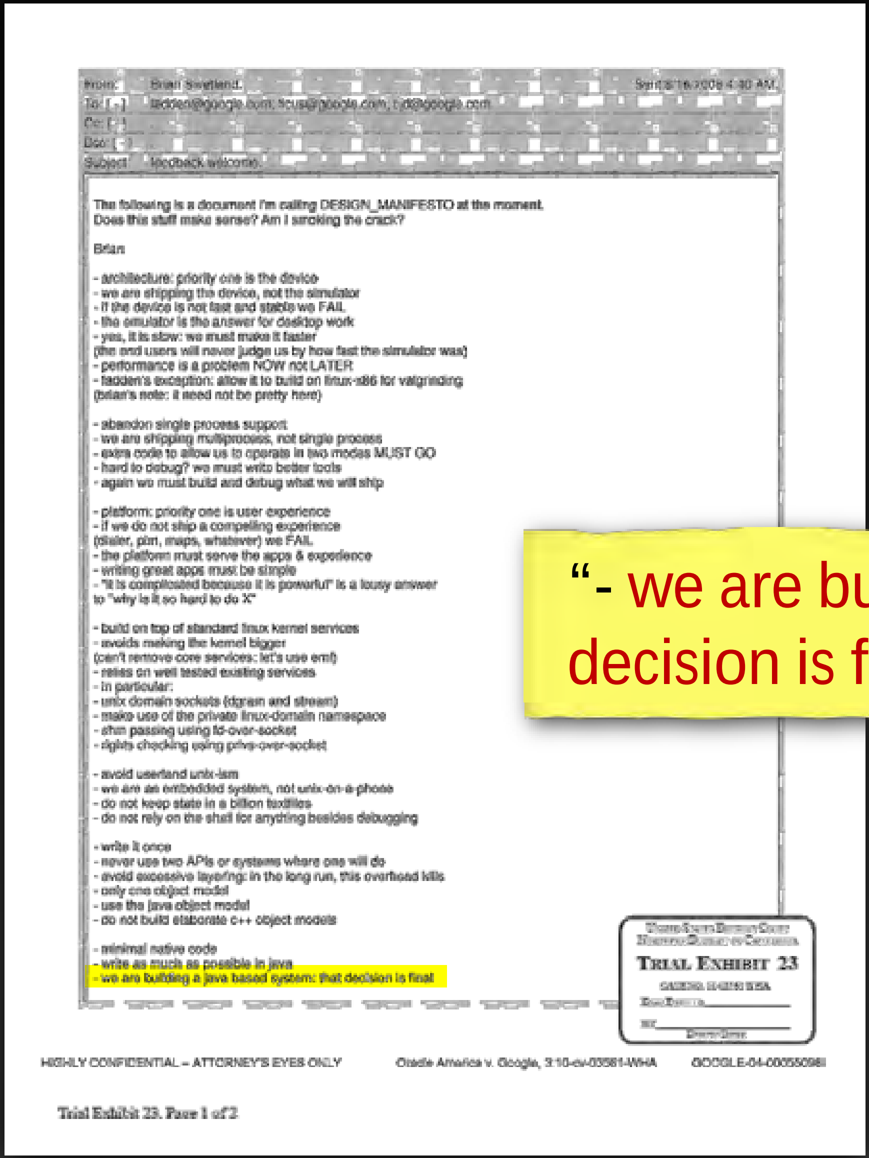
Trial Exhibit 214, Page 1 of 1

From: Eric Schmidt
To: Andy Rubin
Sent: May 14, 2006

"How are we doing on the Sun deal? Its it time to develop a non-Java solution to avoid dealing with them?"

TX 214 at GOOGLE-01-00081724

Google Made Java Central To Android



From: Brian Swetland   Sent: 8/16/2006 4:30 AM
To: [-] fadden@google.com; fcus@google.com; [illegible]@google.com
Cc: [-]
Bcc: [-]
Subject: feedback welcome.

The following is a document I'm calling DESIGN_MANIFESTO at the moment.
Does this stuff make sense? Am I smoking the crack?

Brian

- architecture: priority one is the device
- we are shipping the device, not the simulator
- if the device is not fast and stable we FAIL
- the emulator is the answer for desktop work
- yes, it is slow: we must make it faster
(the end users will never judge us by how fast the simulator was)
- performance is a problem NOW not LATER
- fadden's exception: allow it to build on linux-x86 for valgrinding
(brian's note: it need not be pretty here)

- abandon single process support
- we are shipping multiprocess, not single process
- extra code to allow us to operate in two modes MUST GO
- hard to debug? we must write better tools
- again we must build and debug what we will ship

- platform: priority one is user experience
- if we do not ship a compelling experience
(dialer, pim, maps, whatever) we FAIL
- the platform must serve the apps & experience
- writing great apps must be simple
- "it is complicated because it is powerful" is a lousy answer
to "why is it so hard to do X"

- build on top of standard linux kernel services
- avoids making the kernel bigger
(can't remove core services: let's use em!)
- relies on well tested existing services
- in particular:
- unix domain sockets (dgram and stream)
- make use of the private linux-domain namespace
- shm passing using fd-over-socket
- rights checking using privs-over-socket

- avoid userland unix-ism
- we are an embedded system, not unix-on-a-phone
- do not keep state in a billion textfiles
- do not rely on the shell for anything besides debugging

- write it once
- never use two APIs or systems where one will do
- avoid excessive layering: in the long run, this overhead kills
- only one object model
- use the java object model
- do not build elaborate c++ object models

- minimal native code
- write as much as possible in java
- we are building a java based system: that decision is final

United States District Court
Northern District of California
TRIAL EXHIBIT 23
CASE NO. 10-03561 WHA
Date Entered ____________
By ____________
Deputy Clerk

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Trial Exhibit 23, Page 1 of 2

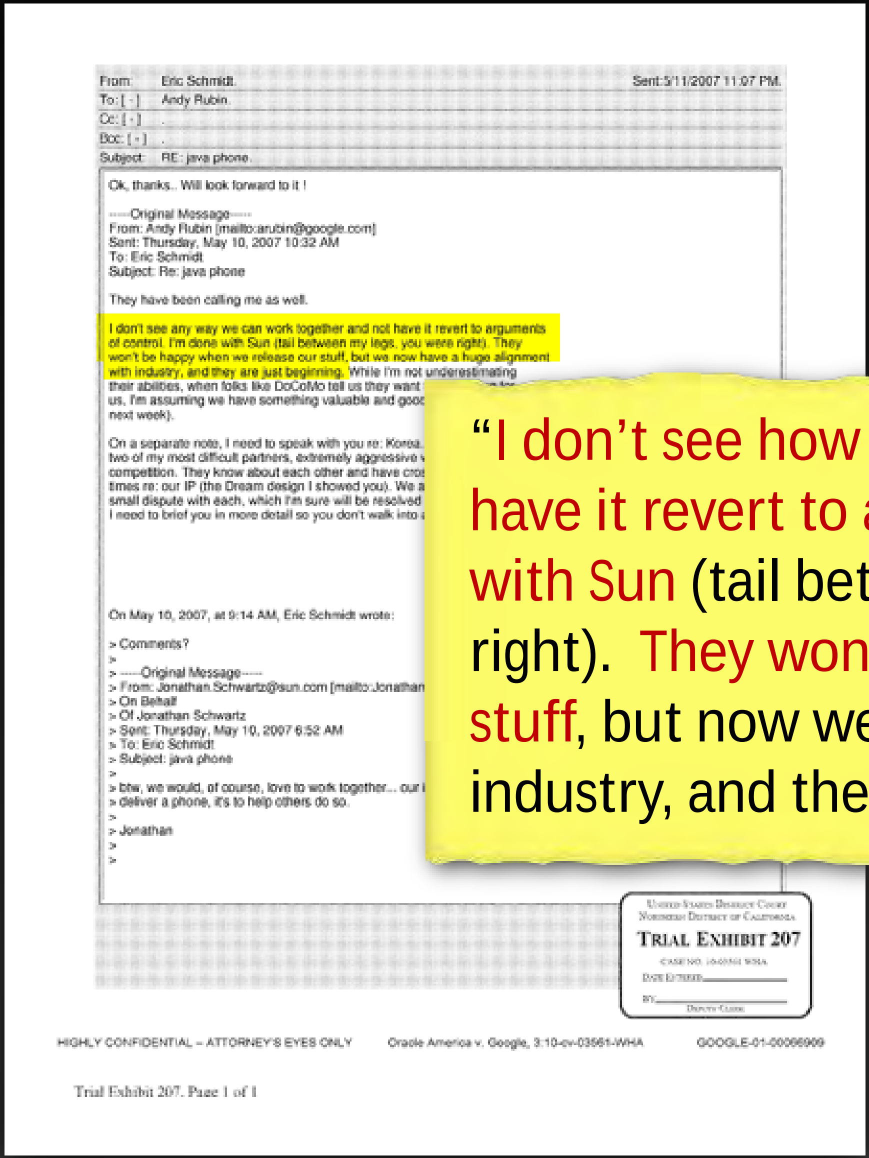
From: Brian Swetland
To: Andy McFadden and others
Sent: August 16, 2006

"- we are building a java based system: that decision is final."

TX 23 at GOOGLE-04-00055098

Google took no license

Google, Unwilling To Share Control With Sun, Decided To Release Android Without Licensing Sun's Java IP



From: Eric Schmidt Sent:5/11/2007 11:07 PM.
To: [-] Andy Rubin.
Cc: [-] .
Bcc: [-] .
Subject: RE: java phone.

Ok, thanks.. Will look forward to it !

-----Original Message-----
From: Andy Rubin [mailto:arubin@google.com]
Sent: Thursday, May 10, 2007 10:32 AM
To: Eric Schmidt
Subject: Re: java phone

They have been calling me as well.

I don't see any way we can work together and not have it revert to arguments of control. I'm done with Sun (tail between my legs, you were right). They won't be happy when we release our stuff, but we now have a huge alignment with industry, and they are just beginning. While I'm not underestimating their abilities, when folks like DoCoMo tell us they want
us, I'm assuming we have something valuable and good
next week).

On a separate note, I need to speak with you re: Korea.
two of my most difficult partners, extremely aggressive
competition. They know about each other and have cros
times re: our IP (the Dream design I showed you). We a
small dispute with each, which I'm sure will be resolved
I need to brief you in more detail so you don't walk into

On May 10, 2007, at 9:14 AM, Eric Schmidt wrote:

> Comments?
>
> -----Original Message-----
> From: Jonathan.Schwartz@sun.com [mailto:Jonathan
> On Behalf
> Of Jonathan Schwartz
> Sent: Thursday, May 10, 2007 6:52 AM
> To: Eric Schmidt
> Subject: java phone
>
> btw, we would, of course, love to work together... our
> deliver a phone, it's to help others do so.
>
> Jonathan
>
>

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
TRIAL EXHIBIT 207
CASE NO. 10-03561 WHA
DATE ENTERED__________
BY__________
DEPUTY CLERK

HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY Oracle America v. Google, 3:10-cv-03561-WHA GOOGLE-01-00066909

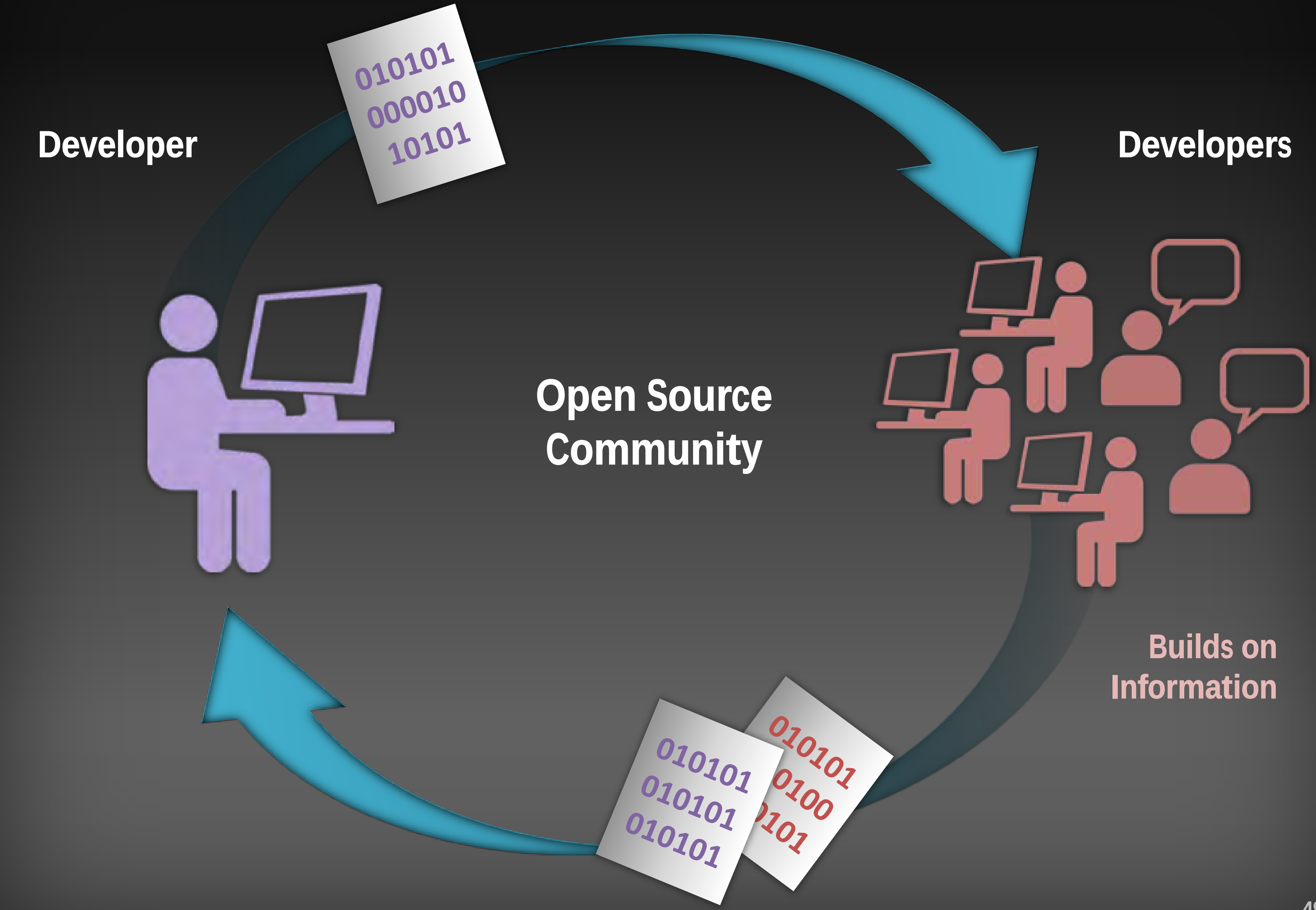
Trial Exhibit 207, Page 1 of 1

From: Andy Rubin
To: Eric Schmidt
Sent: May 11, 2007

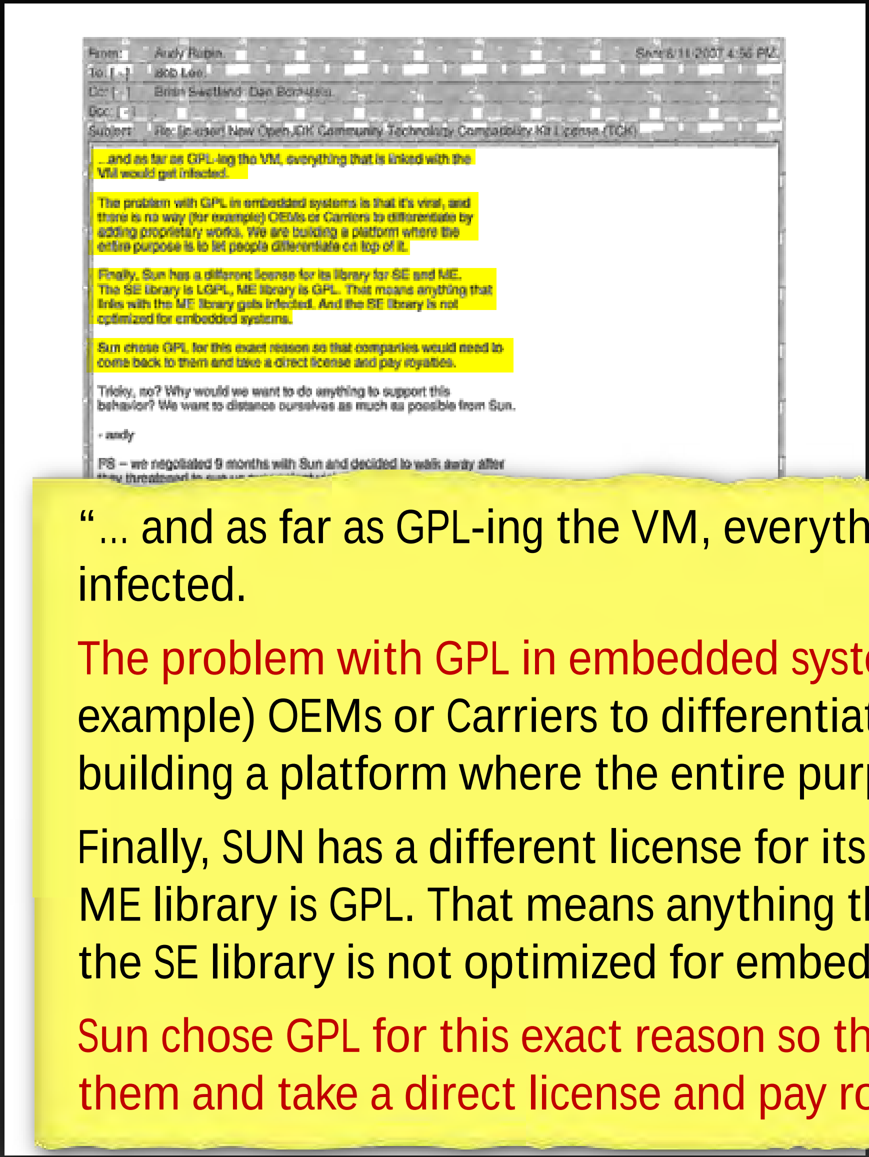
"I don't see how we can work together and not have it revert to arguments of control. I'm done with Sun (tail between my legs, you were right). They won't be happy when we release our stuff, but now we have a huge alignment with industry, and they are just beginning."

TX 207 at GOOGLE-01-00066909

General Public License: How It Works



Google Knew That Even Open Source Java Meant Google Needed A License



From: Andy Rubin — Sent: 8/11/2007 4:56 PM
To: [...] Bob Lee
Cc: [...] Brian Swetland; Dan Bornstein
Bcc: [...]
Subject: Re: [jc-user] New OpenJDK Community Technology Compatibility Kit License (TCK)

...and as far as GPL-ing the VM, everything that is linked with the VM would get infected.

The problem with GPL in embedded systems is that it's viral, and there is no way (for example) OEMs or Carriers to differentiate by adding proprietary works. We are building a platform where the entire purpose is to let people differentiate on top of it.

Finally, Sun has a different license for its library for SE and ME. The SE library is LGPL, ME library is GPL. That means anything that links with the ME library gets infected. And the SE library is not optimized for embedded systems.

Sun chose GPL for this exact reason so that companies would need to come back to them and take a direct license and pay royalties.

Tricky, no? Why would we want to do anything to support this behavior? We want to distance ourselves as much as possible from Sun.

- andy

PS – we negotiated 9 months with Sun and decided to walk away after they threatened

From: Andy Rubin
To: Bob Lee
CC: Brian Swetland,
Dan Bornstein
Sent: August 11, 2007

"... and as far as GPL-ing the VM, everything that is linked with the VM would get infected.

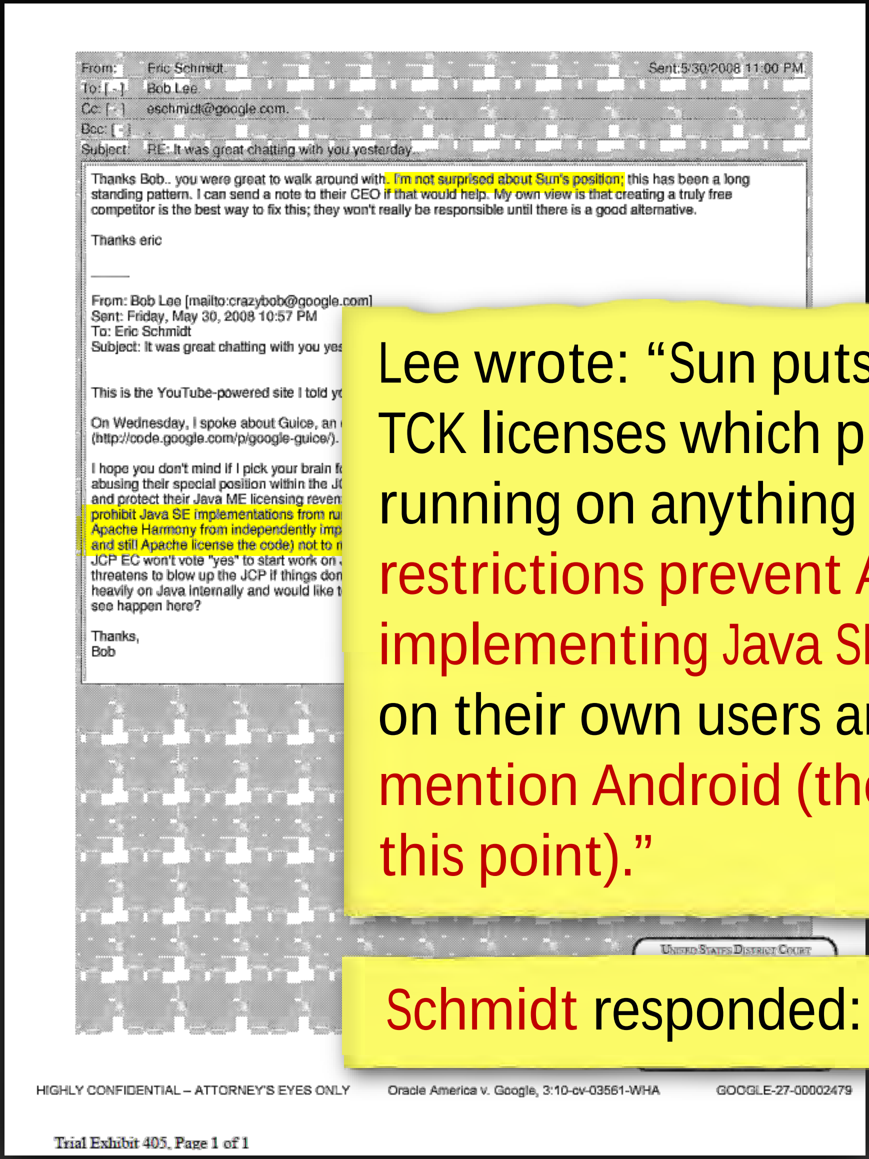
The problem with GPL in embedded systems is that it's viral, and there is no way (for example) OEMs or Carriers to differentiate by adding proprietary works. We are building a platform where the entire purpose is to let people differentiate on top of it.

Finally, SUN has a different license for its library for SE and ME. The SE library is LGPL, ME library is GPL. That means anything that links with the ME library gets infected. And the SE library is not optimized for embedded systems.

Sun chose GPL for this exact reason so that companies would need to come back to them and take a direct license and pay royalties."

TX 230 at GOOGLE-02-00020474

Google Copied From Apache Harmony Knowing That It Was Not Licensed



From: Eric Schmidt Sent:5/30/2008 11:00 PM
To: [-] Bob Lee
Cc: [-] eschmidt@google.com.
Bcc: [-] .
Subject: RE: It was great chatting with you yesterday..

Thanks Bob.. you were great to walk around with. I'm not surprised about Sun's position; this has been a long standing pattern. I can send a note to their CEO if that would help. My own view is that creating a truly free competitor is the best way to fix this; they won't really be responsible until there is a good alternative.

Thanks eric

———

From: Bob Lee [mailto:crazybob@google.com]
Sent: Friday, May 30, 2008 10:57 PM
To: Eric Schmidt
Subject: It was great chatting with you yes

This is the YouTube-powered site I told yo

On Wednesday, I spoke about Guice, an
(http://code.google.com/p/google-guice/).

I hope you don't mind if I pick your brain fo
abusing their special position within the JC
and protect their Java ME licensing reven
prohibit Java SE implementations from ru
Apache Harmony from independently imp
and still Apache license the code) not to n
JCP EC won't vote "yes" to start work on
threatens to blow up the JCP if things don
heavily on Java internally and would like t
see happen here?

Thanks,
Bob

United States District Court

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Trial Exhibit 405, Page 1 of 1

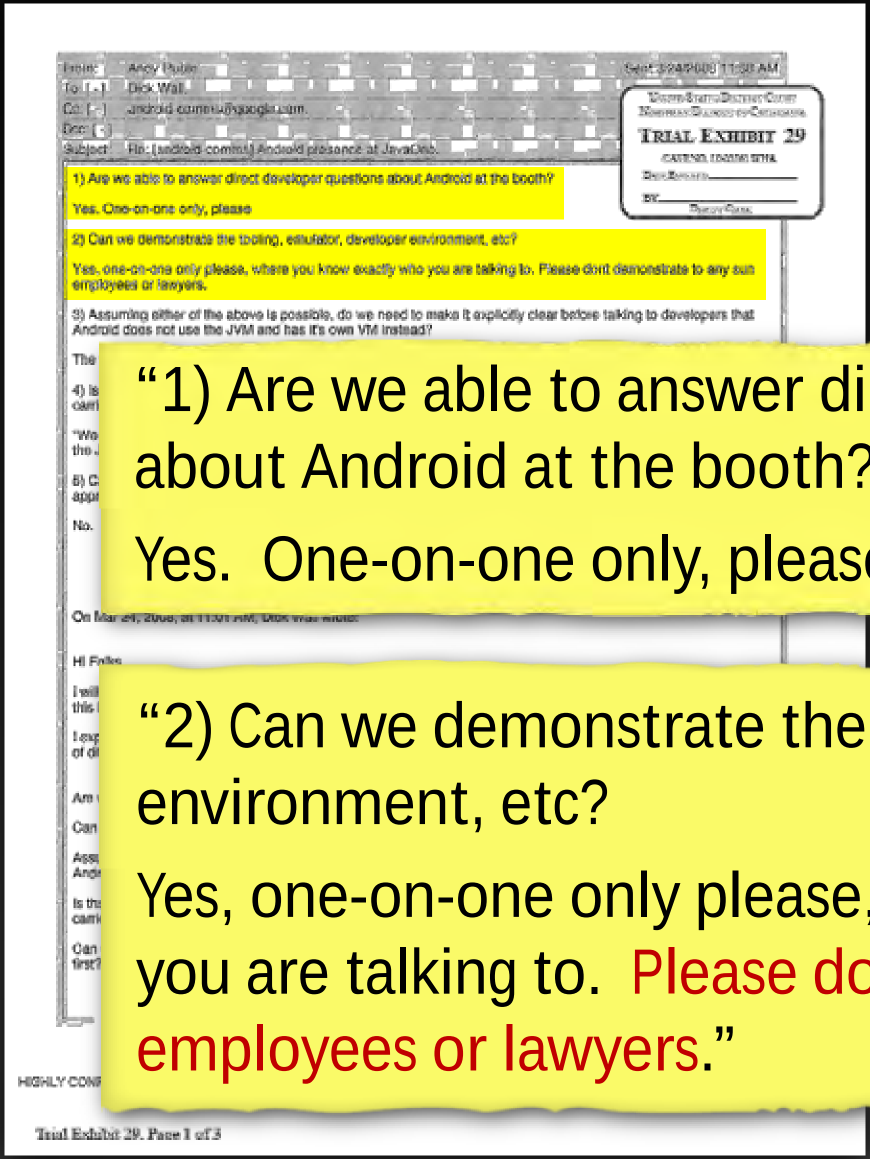
From: Bob Lee
To: Eric Schmidt
Sent: May 30, 2008

Lee wrote: "Sun puts field-of-use restrictions in the Java SE TCK licenses which prohibit Java SE implementations from running on anything but a desktop or server. These restrictions prevent Apache Harmony from independently implementing Java SE (Harmony can't put those restrictions on their own users and still Apache license the code) not to mention Android (though that's water under the bridge at this point)."

Schmidt responded: "I'm not surprised by Sun's position…."

TX 405 at GOOGLE-27-00002479

Google Tried To Conceal Its Use Of Java



From: Andy Rubin Sent: 3/24/2008 11:58 AM
To: Dick Wall
Cc: android-comms@google.com
Bcc:
Subject: Re: [android-comms] Android presence at JavaOne

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
TRIAL EXHIBIT 29
CASE NO. 10-03561 WHA
DATE ENTERED
BY
DEPUTY CLERK

1) Are we able to answer direct developer questions about Android at the booth?

Yes. One-on-one only, please

2) Can we demonstrate the tooling, emulator, developer environment, etc?

Yes, one-on-one only please, where you know exactly who you are talking to. Please dont demonstrate to any sun employees or lawyers.

3) Assuming either of the above is possible, do we need to make it explicitly clear before talking to developers that Android does not use the JVM and has it's own VM instead?

No.

Hi Folks

HIGHLY CONF

Trial Exhibit 29, Page 1 of 3

From: Andy Rubin
To: Dick Wall
Sent: March 24, 2008

"1) Are we able to answer direct developer questions about Android at the booth?

Yes. One-on-one only, please."

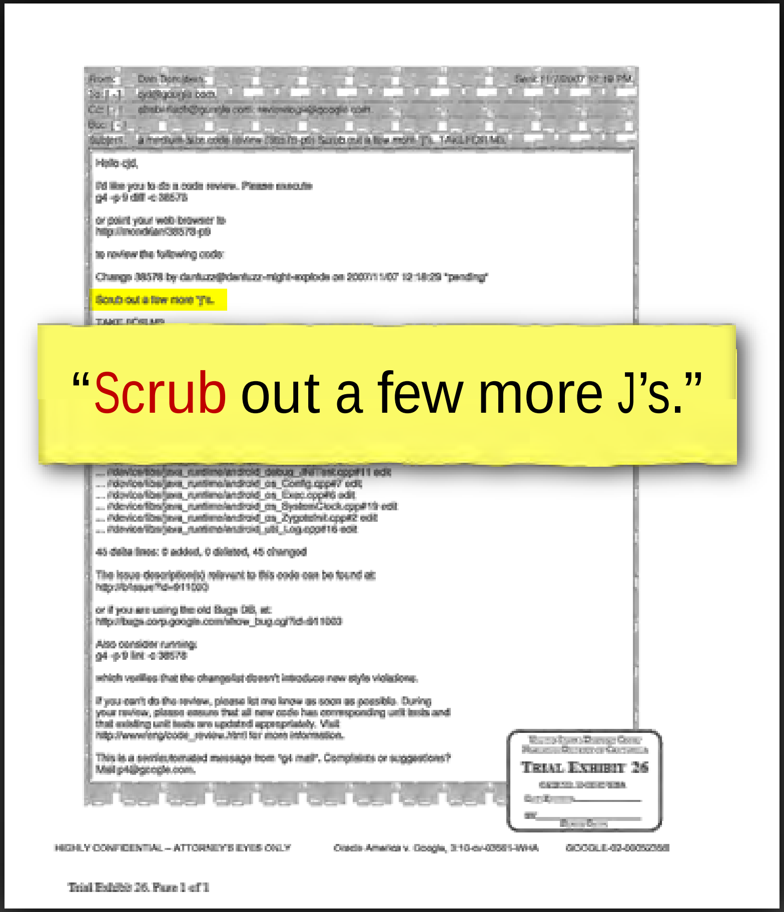
"2) Can we demonstrate the tooling, emulator, developer environment, etc?

Yes, one-on-one only please, where you know exactly who you are talking to. Please don't demonstrate to any sun employees or lawyers."

TX 29 at GOOGLE-01-00035931

Google Tried To Conceal Its Use Of Java

Sent: November 17, 2007
From: Dan Bornstein
To: cjd@google.com
Subject: Follow-up



From: Dan Bornstein   Sent: 11/17/2007 12:18 PM
To: cjd@google.com
Cc: [illegible]@google.com; [illegible]@google.com
Bcc:
Subject: a medium-size code review (38578-p9) Scrub out a few more "J"s. TAKE FORUMS.

Hello cjd,

I'd like you to do a code review. Please execute
g4 -p 9 diff -c 38578

or point your web browser to
http://mondrian/38578-p9

to review the following code:

Change 38578 by danfuzz@danfuzz-might-explode on 2007/11/07 12:18:29 *pending*

Scrub out a few more "J"s.

TAKE FORUMS

... //device/libs/java_runtime/android_debug_[illegible].cpp#11 edit
... //device/libs/java_runtime/android_os_Config.cpp#7 edit
... //device/libs/java_runtime/android_os_Exec.cpp#6 edit
... //device/libs/java_runtime/android_os_SystemClock.cpp#19 edit
... //device/libs/java_runtime/android_os_ZygoteInit.cpp#2 edit
... //device/libs/java_runtime/android_util_Log.cpp#16 edit

45 delta lines: 0 added, 0 deleted, 45 changed

The issue description(s) relevant to this code can be found at:
http://b/issue?id=911003

or if you are using the old Bugs DB, at:
http://bugs.corp.google.com/show_bug.cgi?id=911003

Also consider running:
g4 -p 9 lint -c 38578

which verifies that the changelist doesn't introduce new style violations.

If you can't do the review, please let me know as soon as possible. During your review, please ensure that all new code has corresponding unit tests and that existing unit tests are updated appropriately. Visit http://www/eng/code_review.html for more information.

This is a semiautomated message from "g4 mail". Complaints or suggestions? Mail p4@google.com.

United States District Court
Northern District of California
TRIAL EXHIBIT 26
CASE NO. 3:10-cv-03561 WHA
Date Entered ________
By ________
Deputy Clerk

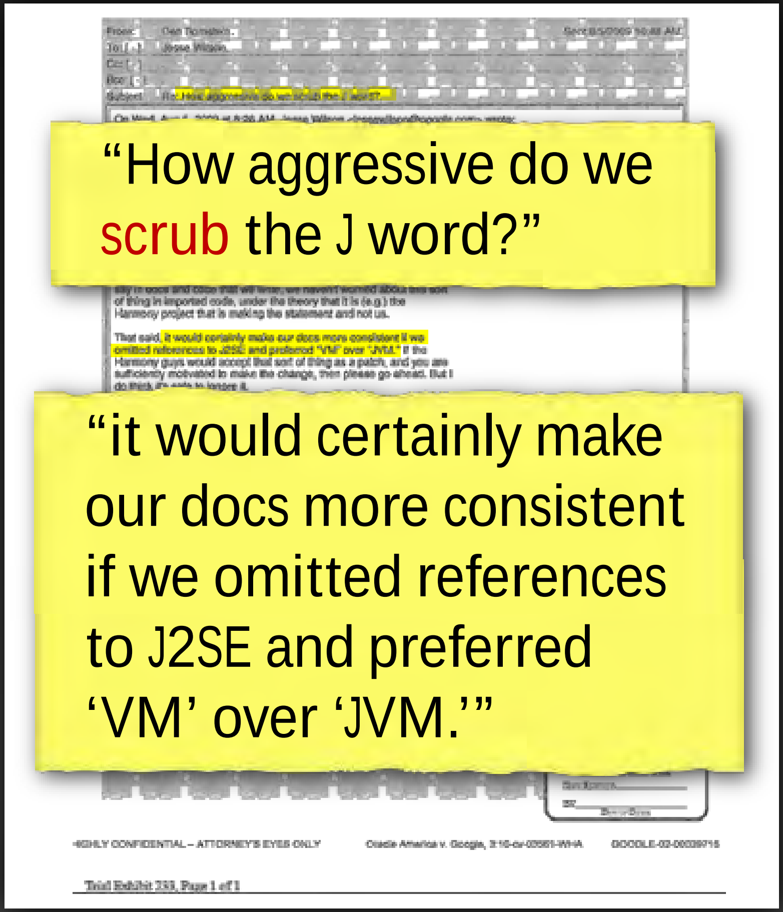
HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY   Oracle America v. Google, 3:10-cv-03561-WHA   GOOGLE-02-00052356

Trial Exhibit 26, Page 1 of 1

"Scrub out a few more J's."

TX 26 at GOOGLE-02-00052356

Sent: August 5, 2009
From: Dan Bornstein
To: Jesse Wilson
Subject: How aggressive do we scrub the J word?



From: Dan Bornstein   Sent: 8/5/2009 10:48 AM
To: Jesse Wilson
Cc:
Bcc:
Subject: Re: How aggressive do we scrub the J word?

On Wed, Aug 5, 2009 at 9:26 AM, Jesse Wilson <jessewilson@google.com> wrote:

[illegible] in docs and code that we write, we haven't worried about this sort of thing in imported code, under the theory that it is (e.g.) the Harmony project that is making the statement and not us.

That said, it would certainly make our docs more consistent if we omitted references to J2SE and preferred "VM" over "JVM." If the Harmony guys would accept that sort of thing as a patch, and you are sufficiently motivated to make the change, then please go ahead. But I do think it's safe to ignore it.

Date Entered ________
By ________
Deputy Clerk

HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY   Oracle America v. Google, 3:10-cv-03561-WHA   GOOGLE-02-00039715

Trial Exhibit 233, Page 1 of 1

"How aggressive do we scrub the J word?"

"it would certainly make our docs more consistent if we omitted references to J2SE and preferred 'VM' over 'JVM.'"

TX 233 at GOOGLE-02-00039715

Google profited immensely

Does Google Make Money From Android?

Andy Rubin

Individual Dep.
75:12-76:2,
April 5, 2011

Q. I want to make sure I understand correctly. It's your testimony that Google does not make revenue off Android at all?

A. We do not make revenue off of the open source platform, correct. We do not sell the platform. We don't license the platform. It's licensed under an Apache open source license. It's not a traditional software business. So the answer is no, we don't make money off of licensing Android.

Q. That wasn't the question. The question is: Do you make revenue off of Android? Not licensing Android.

A. No, I don't believe we make money off of Android.

Does Google Make Money From Android?

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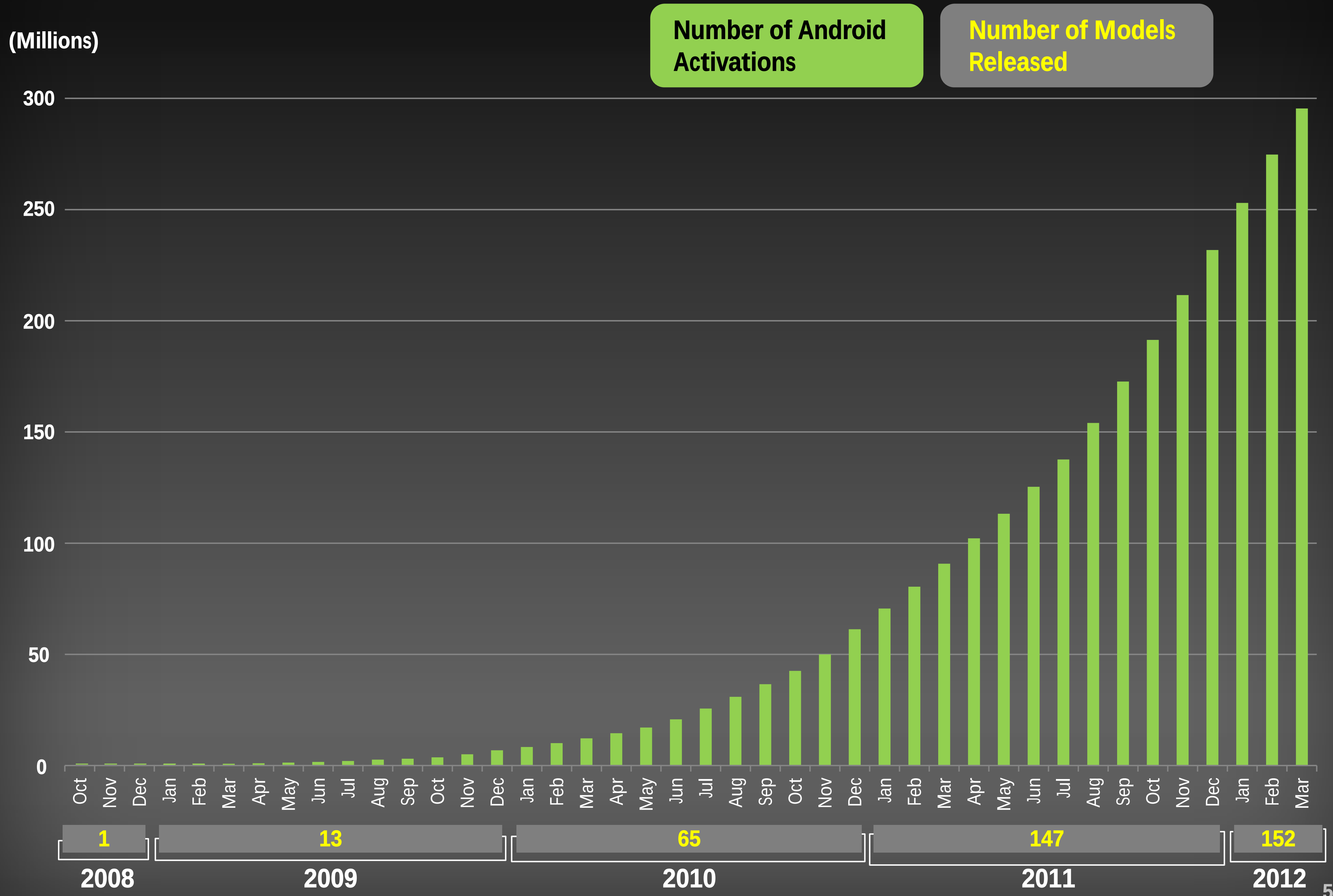
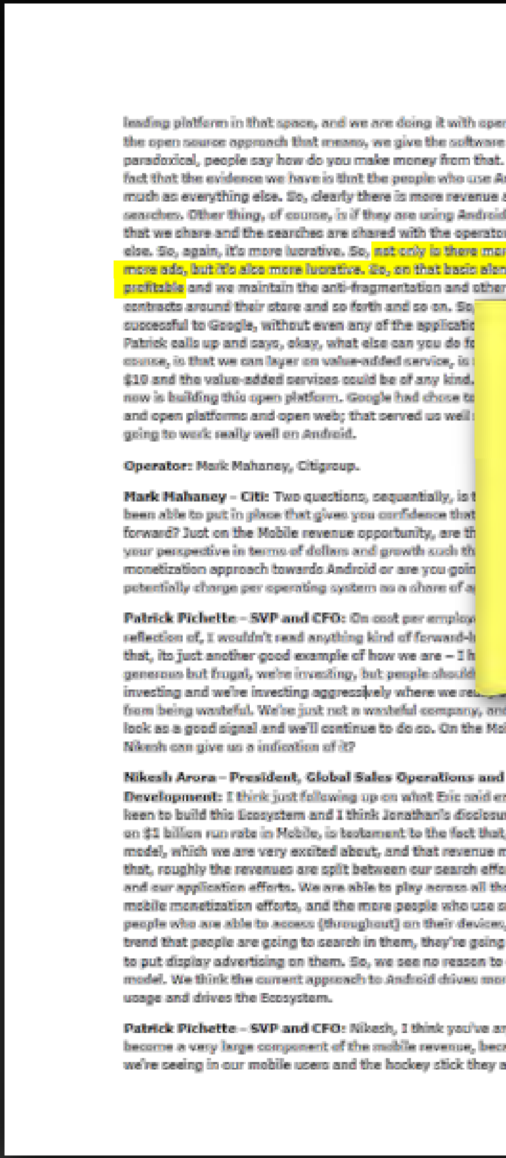
A. No, I don't believe we make money off of Android.

Android Activations and Models Since October 2008



Actually, Android Is “Hugely Profitable” For Google



leading platform in that space, and we are doing it with open source approach. So, in the open source approach that means, we give the software away, which is always paradoxical, people say how do you make money from that. Well let's start with the fact that the evidence we have is that the people who use Android, search twice as much as everything else. So, clearly there is more revenue associated with those searches. Other thing, of course, is if they are using Android systems, the revenue that we share and the searches are shared with the operator, but not with anybody else. So, again, it's more lucrative. So, not only is there more searches, and there's more ads, but it's also more lucrative. So, on that basis alone, Android is hugely profitable and we maintain the anti-fragmentation and other things by a series of
contracts around their store and so forth and so on. So
successful to Google, without even any of the applicatio
Patrick calls up and says, okay, what else can you do fo
course, is that we can layer on value-added service, is
$10 and the value-added services could be of any kind.
now is building this open platform. Google had chose to
and open platforms and open web; that served us well
going to work really well on Android.

Operator: Mark Mahaney, Citigroup.

Mark Mahaney – Citi: Two questions, sequentially, is t
been able to put in place that gives you confidence that
forward? Just on the Mobile revenue opportunity, are th
your perspective in terms of dollars and growth such th
monetization approach towards Android or are you goin
potentially charge per operating system as a share of a

Patrick Pichette – SVP and CFO: On cost per employ
reflection of, I wouldn't read anything kind of forward-lo
that, its just another good example of how we are – I h
generous but frugal, we're investing, but people should
investing and we're investing aggressively where we rea
from being wasteful. We're just not a wasteful company, and so in that sense, it does look as a good signal and we'll continue to do so. On the Mobile, maybe Jonathan or Nikesh can give us a indiction of it?

Nikesh Arora – President, Global Sales Operations and Business Development: I think just following up on what Eric said earlier, we are very, very keen to build this Ecosystem and I think Jonathan's disclosure on the fact that we're on $1 billion run rate in Mobile, is testament to the fact that, now we have a revenue model, which we are very excited about, and that revenue model sort of proves to us that, roughly the revenues are split between our search efforts, our display efforts and our application efforts. We are able to play across all those three spaces with our mobile monetization efforts, and the more people who use smartphones, the more people who are able to access (throughout) on their devices, the more we see the trend that people are going to search in them, they're going to give us opportunities to put display advertising on them. So, we see no reason to change our monetization model. We think the current approach to Android drives more users and more as usage and drives the Ecosystem.

Patrick Pichette – SVP and CFO: Nikesh, I think you've argued that display will become a very large component of the mobile revenue, because of the success that we're seeing in our mobile users and the hockey stick they are in.

October 13, 2011
Google Inc. Q3 2011 Earnings Call

Eric Schmidt:

“…not only is there more searches, and there’s more ads, but it’s also more lucrative. So, on that basis alone, Android is hugely profitable.”

Schmidt Quote From Q3 2011 Earnings Call

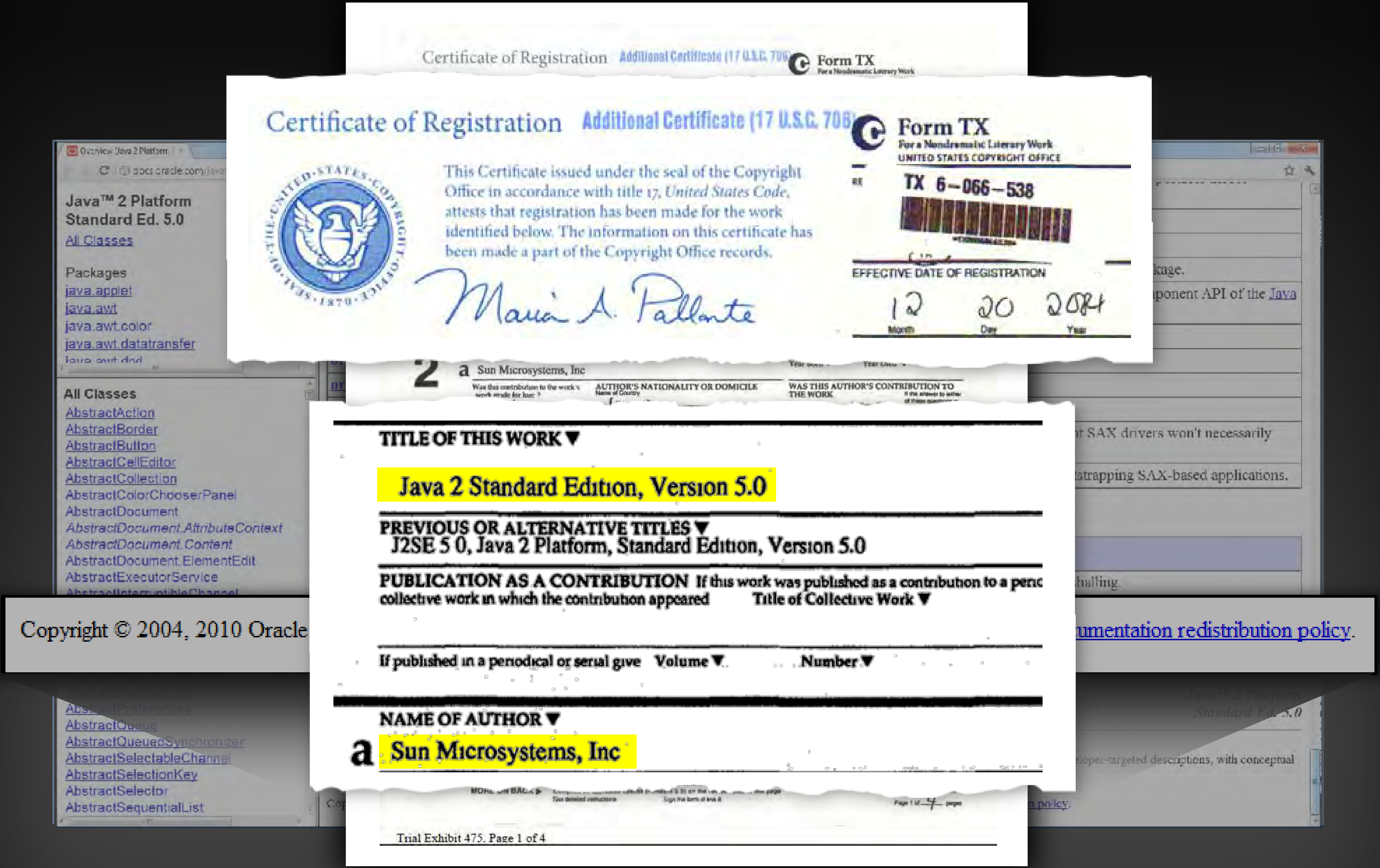
Java Technology and Licensing

Google’s Need for Java Technology and License

Google’s Infringement

What We Will Prove

Java Materials Are Copyrighted



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Certificate of Registration Additional Certificate (17 U.S.C. 706)

Form TX
For a Nondramatic Literary Work
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THE UNITED STATES COPYRIGHT OFFICE · 1870 ·

This Certificate issued under the seal of the Copyright Office in accordance with title 17, *United States Code*, attests that registration has been made for the work identified below. The information on this certificate has been made a part of the Copyright Office records.

Maria A. Pallante

TX 6-066-538

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Month	Day	Year

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Java 2 Standard Edition, Version 5.0

PREVIOUS OR ALTERNATIVE TITLES ▼
J2SE 5 0, Java 2 Platform, Standard Edition, Version 5.0

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If published in a periodical or serial give Volume ▼ Number ▼

NAME OF AUTHOR ▼

a Sun Microsystems, Inc

MORE ON BACK ▶ Complete all applicable spaces (numbers 5-9) on the reverse side of this page See detailed instructions Sign the form at line 8 Page 1 of 4 pages

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Java™ 2 Platform
Standard Ed. 5.0
All Classes

Packages
java.applet
java.awt
java.awt.color
java.awt.datatransfer
java.awt.dnd

All Classes
AbstractAction
AbstractBorder
AbstractButton
AbstractCellEditor
AbstractCollection
AbstractColorChooserPanel
AbstractDocument
AbstractDocument.AttributeContext
AbstractDocument.Content
AbstractDocument.ElementEdit
AbstractExecutorService
AbstractInterruptibleChannel
AbstractMethodError
AbstractPreferences
AbstractQueue
AbstractQueuedSynchronizer
AbstractSelectableChannel
AbstractSelectionKey
AbstractSelector
AbstractSequentialList

kage.
ponent API of the Java
t SAX drivers won't necessarily
strapping SAX-based applications.
halling.
Java™ 2 Platform Standard Ed. 5.0
loper-targeted descriptions, with conceptual
n policy.

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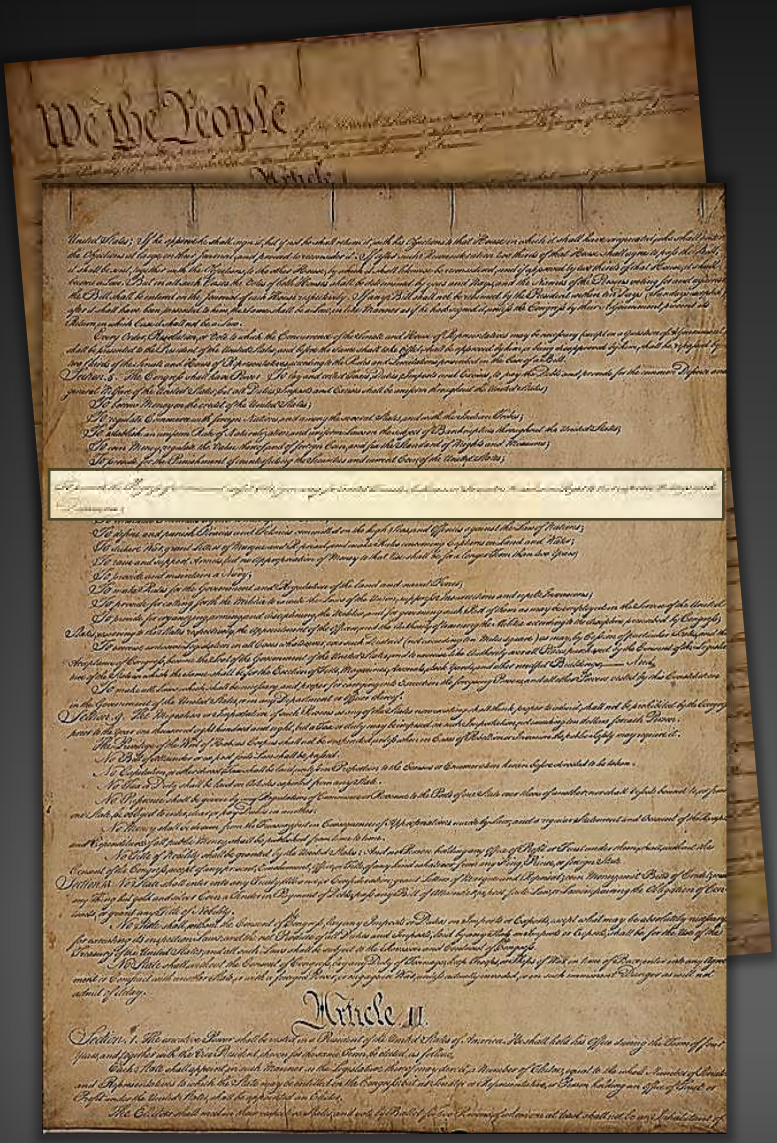
The United States Constitution’s Copyright Clause


We the People
Article. II.

The United States Constitution

Article I, Section 8, Clause 8
empowers the United States Congress:

> *“To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”*

Designing APIs Requires Creativity And Skill

> "I find it very rewarding to design great APIs and have people come to me years later and say, wow, you know, the collections framework changed my life."
>
> -Joshua Bloch, Google Chief Java Architect
> & Former Designer of Sun Java APIs
> (Bloch Dep. 92:13-93:16, July 8, 2011)

> "Just as it's hard to find people that are really good at anything that's hard, whether it be, you know, being an artist, a football player, a concert violinist. Those things are hard. This is something that's hard in the same way."
>
> -Google's Copyright Expert
> (Astrachan Dep. 128:9-13, Sept. 9, 2011)

Designing APIs Requires Creativity And Skill

JavaPolis 2005

December 12 till 16th, Antwerp - Belgium

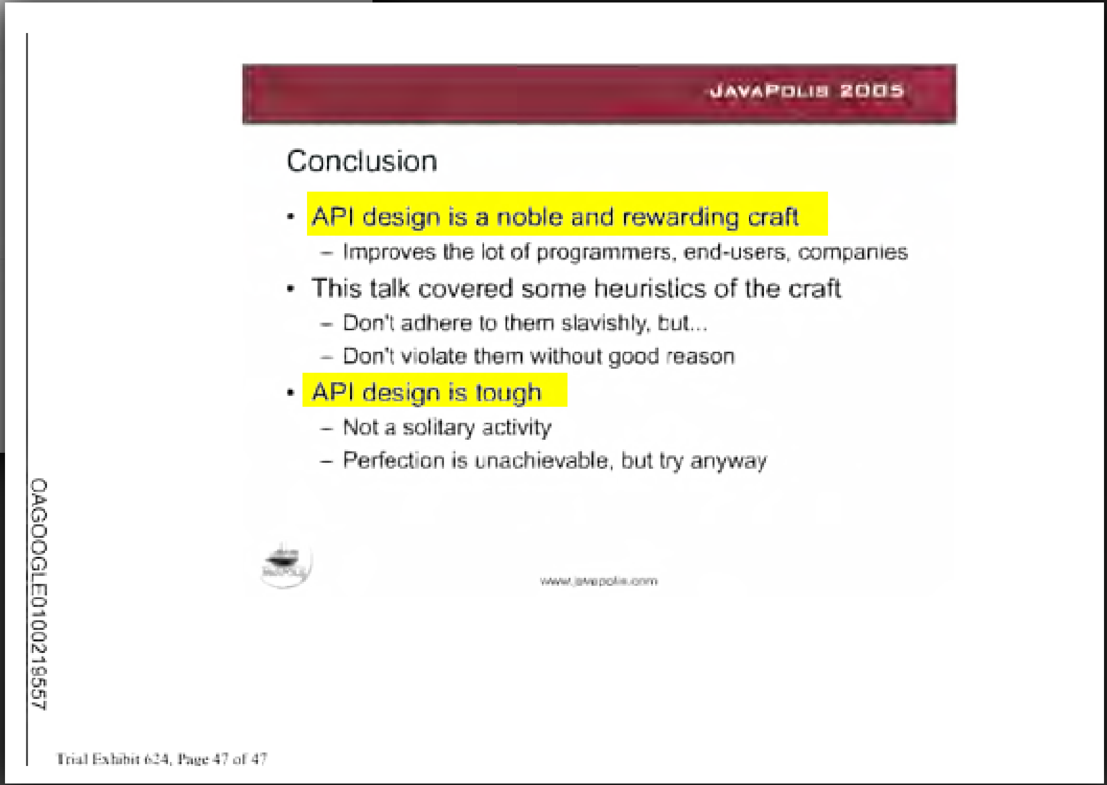
How to Design a Good API
and Why it Matters

Joshua Bloch
Google Inc.

www.javapolis.com

OAGOOGLE0100219511

Trial Exhibit 624, Page 1 of 47



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

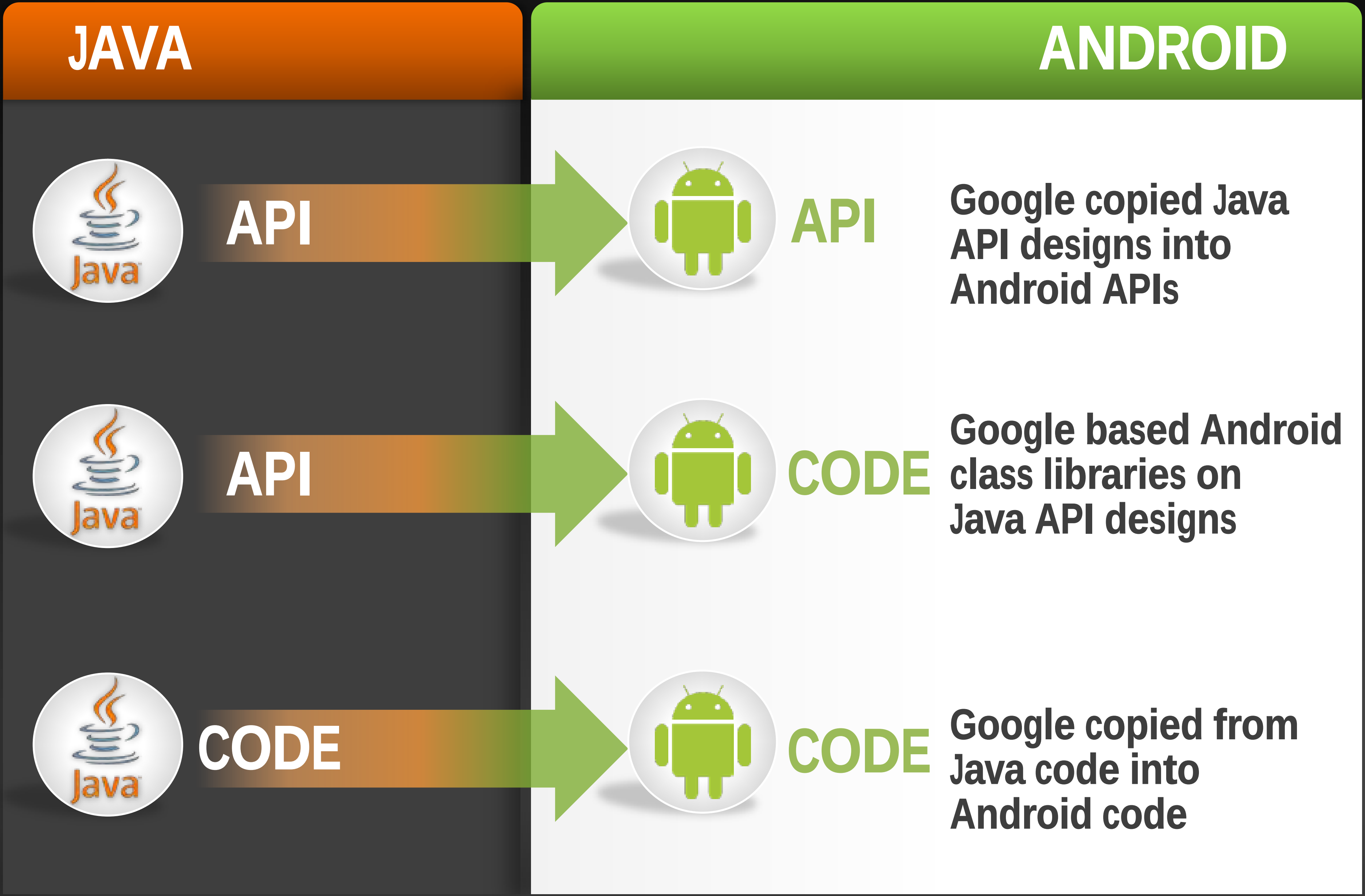
www.javapolis.com

OAGOOGLE0100219557

Trial Exhibit 624, Page 47 of 47

TX 624 at OAGOOGLE0100219557

What Google Copied



JAVA

ANDROID

API → API

Google copied Java API designs into Android APIs

API → CODE

Google based Android class libraries on Java API designs

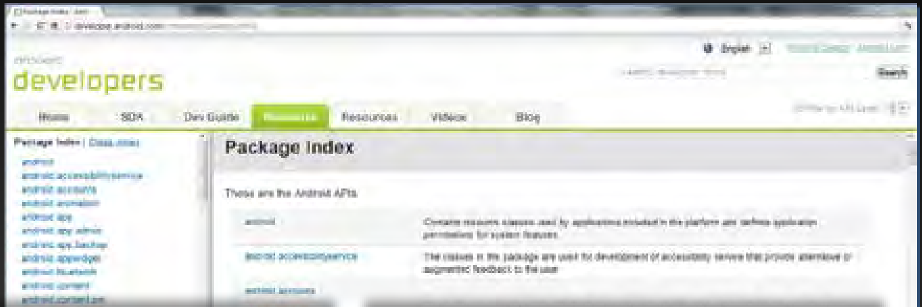
CODE → CODE

Google copied from Java code into Android code

Each Java API Design Contains Hundreds of Elements And Complex Interactions With Other APIs

Java™ 2 Platform Standard Edition 5.0
API Specification

This document is the API specification for the Java 2 Platform Standard Edition 5.0



developers

Package Index

These are the Android APIs.

Java API Packages Copied

java.awt.font
java.beans
java.io
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java.lang.ref
java.lang.reflect
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java.nio
java.nio.channels
java.nio.channels.spi
java.nio.charset
java.nio.charset.spi
java.security
java.security.acl
java.security.cert
java.security.interfaces
java.security.spec

java.sql
java.text
java.util
java.util.jar
java.util.logging
java.util.prefs
java.util.regex
java.util.zip
javax.crypto
javax.crypto.interface
javax.crypto.spec
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javax.net.ssl
javax.security.auth
javax.security.auth.callb
javax.security.auth.log
javax.security.auth.x5
javax.security.cert
javax.sql

java.nio

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ByteOrder
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DoubleBuffer
FloatBuffer
IntBuffer
LongBuffer
MappedByteBuffer
ShortBuffer

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BufferUnderflowException
InvalidMarkException
ReadOnlyBufferException

java.nio

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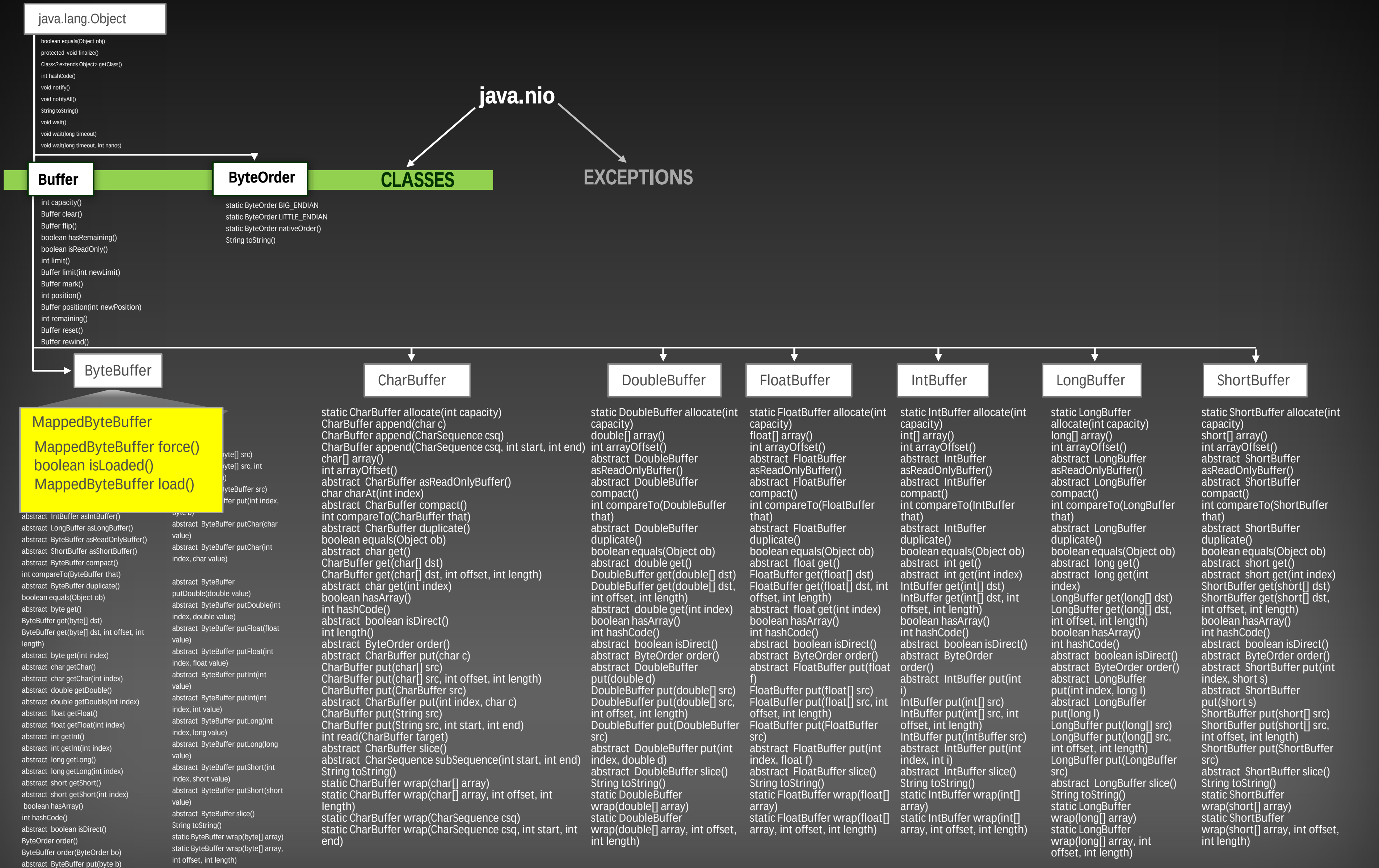
Each Java API Design Contains Hundreds of Elements And Complex Interactions With Other APIs



java.lang.Object

- boolean equals(Object obj)
- protected void finalize()
- Class<? extends Object> getClass()
- int hashCode()
- void notify()
- void notifyAll()
- String toString()
- void wait()
- void wait(long timeout)
- void wait(long timeout, int nanos)

Buffer

- int capacity()
- Buffer clear()
- Buffer flip()
- boolean hasRemaining()
- boolean isReadOnly()
- int limit()
- Buffer limit(int newLimit)
- Buffer mark()
- int position()
- Buffer position(int newPosition)
- int remaining()
- Buffer reset()
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- static ByteOrder BIG_ENDIAN
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ByteBuffer

MappedByteBuffer

- MappedByteBuffer force()
- boolean isLoaded()
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- abstract IntBuffer asIntBuffer()
- abstract LongBuffer asLongBuffer()
- abstract ByteBuffer asReadOnlyBuffer()
- abstract ShortBuffer asShortBuffer()
- abstract ByteBuffer compact()
- int compareTo(ByteBuffer that)
- abstract ByteBuffer duplicate()
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- abstract byte get()
- ByteBuffer get(byte[] dst)
- ByteBuffer get(byte[] dst, int offset, int length)
- abstract byte get(int index)
- abstract char getChar()
- abstract char getChar(int index)
- abstract double getDouble()
- abstract double getDouble(int index)
- abstract float getFloat()
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- abstract int getInt()
- abstract int getInt(int index)
- abstract long getLong()
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- abstract short getShort()
- abstract short getShort(int index)
- boolean hasArray()
- int hashCode()
- abstract boolean isDirect()
- ByteOrder order()
- ByteBuffer order(ByteOrder bo)
- abstract ByteBuffer put(byte b)

- yte[] src)
- yte[] src, int
-)
- yteBuffer src)
- ffer put(int index, byte b)
- abstract ByteBuffer putChar(char value)
- abstract ByteBuffer putChar(int index, char value)
- abstract ByteBuffer putDouble(double value)
- abstract ByteBuffer putDouble(int index, double value)
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- abstract ByteBuffer putFloat(int index, float value)
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- abstract ByteBuffer putLong(long value)
- abstract ByteBuffer putShort(int index, short value)
- abstract ByteBuffer putShort(short value)
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- String toString()
- static ByteBuffer wrap(byte[] array)
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CharBuffer

- static CharBuffer allocate(int capacity)
- CharBuffer append(char c)
- CharBuffer append(CharSequence csq)
- CharBuffer append(CharSequence csq, int start, int end)
- char[] array()
- int arrayOffset()
- abstract CharBuffer asReadOnlyBuffer()
- char charAt(int index)
- abstract CharBuffer compact()
- int compareTo(CharBuffer that)
- abstract CharBuffer duplicate()
- boolean equals(Object ob)
- abstract char get()
- CharBuffer get(char[] dst)
- CharBuffer get(char[] dst, int offset, int length)
- abstract char get(int index)
- boolean hasArray()
- int hashCode()
- abstract boolean isDirect()
- int length()
- abstract ByteOrder order()
- abstract CharBuffer put(char c)
- CharBuffer put(char[] src)
- CharBuffer put(char[] src, int offset, int length)
- CharBuffer put(CharBuffer src)
- abstract CharBuffer put(int index, char c)
- CharBuffer put(String src)
- CharBuffer put(String src, int start, int end)
- int read(CharBuffer target)
- abstract CharBuffer slice()
- abstract CharSequence subSequence(int start, int end)
- String toString()
- static CharBuffer wrap(char[] array)
- static CharBuffer wrap(char[] array, int offset, int length)
- static CharBuffer wrap(CharSequence csq)
- static CharBuffer wrap(CharSequence csq, int start, int end)

DoubleBuffer

- static DoubleBuffer allocate(int capacity)
- double[] array()
- int arrayOffset()
- abstract DoubleBuffer asReadOnlyBuffer()
- abstract DoubleBuffer compact()
- int compareTo(DoubleBuffer that)
- abstract DoubleBuffer duplicate()
- boolean equals(Object ob)
- abstract double get()
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- DoubleBuffer get(double[] dst, int offset, int length)
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- abstract boolean isDirect()
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- abstract DoubleBuffer put(double d)
- DoubleBuffer put(double[] src)
- DoubleBuffer put(double[] src, int offset, int length)
- DoubleBuffer put(DoubleBuffer src)
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- abstract DoubleBuffer slice()
- String toString()
- static DoubleBuffer wrap(double[] array)
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FloatBuffer

- static FloatBuffer allocate(int capacity)
- float[] array()
- int arrayOffset()
- abstract FloatBuffer asReadOnlyBuffer()
- abstract FloatBuffer compact()
- int compareTo(FloatBuffer that)
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- boolean equals(Object ob)
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- FloatBuffer get(float[] dst)
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- abstract float get(int index)
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- int hashCode()
- abstract boolean isDirect()
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- abstract FloatBuffer put(float f)
- FloatBuffer put(float[] src)
- FloatBuffer put(float[] src, int offset, int length)
- FloatBuffer put(FloatBuffer src)
- abstract FloatBuffer put(int index, float f)
- abstract FloatBuffer slice()
- String toString()
- static FloatBuffer wrap(float[] array)
- static FloatBuffer wrap(float[] array, int offset, int length)

IntBuffer

- static IntBuffer allocate(int capacity)
- int[] array()
- int arrayOffset()
- abstract IntBuffer asReadOnlyBuffer()
- abstract IntBuffer compact()
- int compareTo(IntBuffer that)
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- abstract boolean isDirect()
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- IntBuffer put(int[] src)
- IntBuffer put(int[] src, int offset, int length)
- IntBuffer put(IntBuffer src)
- abstract IntBuffer put(int index, int i)
- abstract IntBuffer slice()
- String toString()
- static IntBuffer wrap(int[] array)
- static IntBuffer wrap(int[] array, int offset, int length)

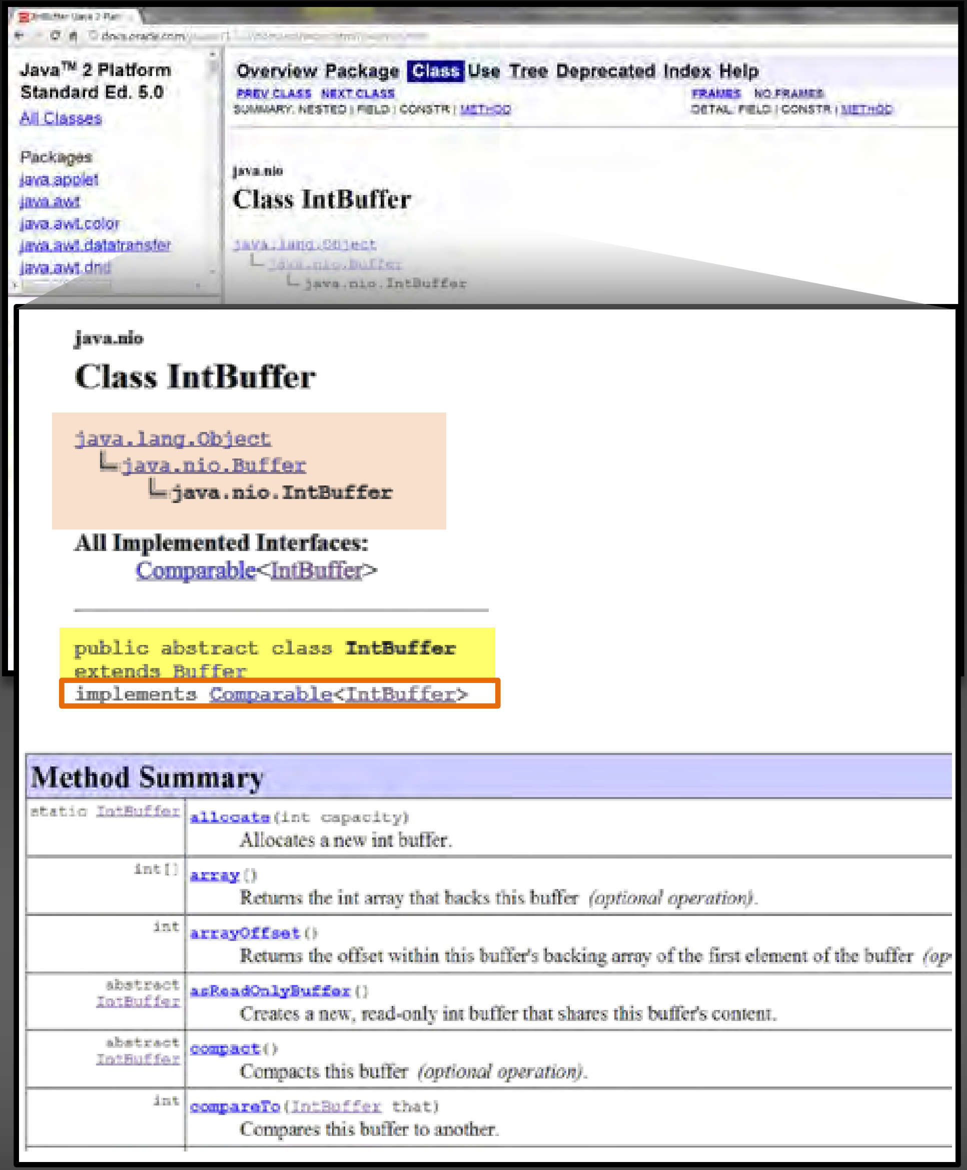
LongBuffer

- static LongBuffer allocate(int capacity)
- long[] array()
- int arrayOffset()
- abstract LongBuffer asReadOnlyBuffer()
- abstract LongBuffer compact()
- int compareTo(LongBuffer that)
- abstract LongBuffer duplicate()
- boolean equals(Object ob)
- abstract long get()
- abstract long get(int index)
- LongBuffer get(long[] dst)
- LongBuffer get(long[] dst, int offset, int length)
- boolean hasArray()
- int hashCode()
- abstract boolean isDirect()
- abstract ByteOrder order()
- abstract LongBuffer put(int index, long l)
- abstract LongBuffer put(long l)
- LongBuffer put(long[] src)
- LongBuffer put(long[] src, int offset, int length)
- LongBuffer put(LongBuffer src)
- abstract LongBuffer slice()
- String toString()
- static LongBuffer wrap(long[] array)
- static LongBuffer wrap(long[] array, int offset, int length)

ShortBuffer

- static ShortBuffer allocate(int capacity)
- short[] array()
- int arrayOffset()
- abstract ShortBuffer asReadOnlyBuffer()
- abstract ShortBuffer compact()
- int compareTo(ShortBuffer that)
- abstract ShortBuffer duplicate()
- boolean equals(Object ob)
- abstract short get()
- abstract short get(int index)
- ShortBuffer get(short[] dst)
- ShortBuffer get(short[] dst, int offset, int length)
- boolean hasArray()
- int hashCode()
- abstract boolean isDirect()
- abstract ByteOrder order()
- abstract ShortBuffer put(int index, short s)
- abstract ShortBuffer put(short s)
- ShortBuffer put(short[] src)
- ShortBuffer put(short[] src, int offset, int length)
- ShortBuffer put(ShortBuffer src)
- abstract ShortBuffer slice()
- String toString()
- static ShortBuffer wrap(short[] array)
- static ShortBuffer wrap(short[] array, int offset, int length)

Each Java API Design Contains Hundreds of Elements And Complex Interactions With Other APIs



Java™ 2 Platform
Standard Ed. 5.0

All Classes

Packages
java.applet
java.awt
java.awt.color
java.awt.datatransfer
java.awt.dnd

Overview Package Class Use Tree Deprecated Index Help

SUMMARY: NESTED | FIELD | CONSTR | METHOD
DETAIL: FIELD | CONSTR | METHOD

java.nio
Class IntBuffer
java.lang.Object
└java.nio.Buffer
└java.nio.IntBuffer

java.nio

Class IntBuffer

```
java.lang.Object
  └java.nio.Buffer
      └java.nio.IntBuffer
```

All Implemented Interfaces:
Comparable<IntBuffer>

```
public abstract class IntBuffer
extends Buffer
implements Comparable<IntBuffer>
```

Method Summary

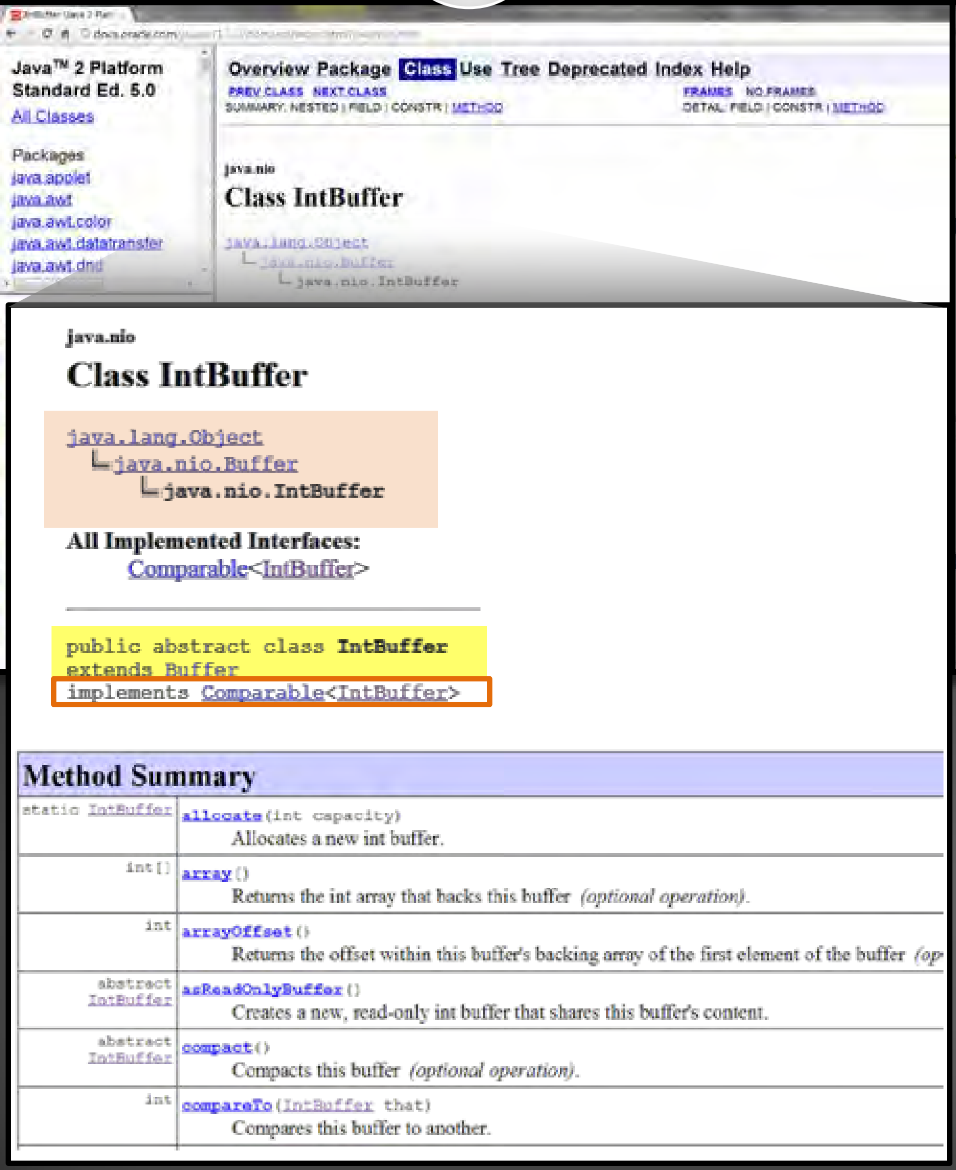
static IntBuffer	allocate(int capacity) Allocates a new int buffer.
int[]	array() Returns the int array that backs this buffer *(optional operation)*.
int	arrayOffset() Returns the offset within this buffer's backing array of the first element of the buffer *(op*
abstract IntBuffer	asReadOnlyBuffer() Creates a new, read-only int buffer that shares this buffer's content.
abstract IntBuffer	compact() Compacts this buffer *(optional operation)*.
int	compareTo(IntBuffer that) Compares this buffer to another.

Google Copied Java API Designs

Java

API

API



Java™ 2 Platform
Standard Ed. 5.0

All Classes

Packages
java.applet
java.awt
java.awt.color
java.awt.datatransfer
java.awt.dnd

Overview Package **Class** Use Tree Deprecated Index Help

PREV CLASS NEXT CLASS FRAMES NO FRAMES

SUMMARY: NESTED | FIELD | CONSTR | METHOD DETAIL: FIELD | CONSTR | METHOD

java.nio

Class IntBuffer

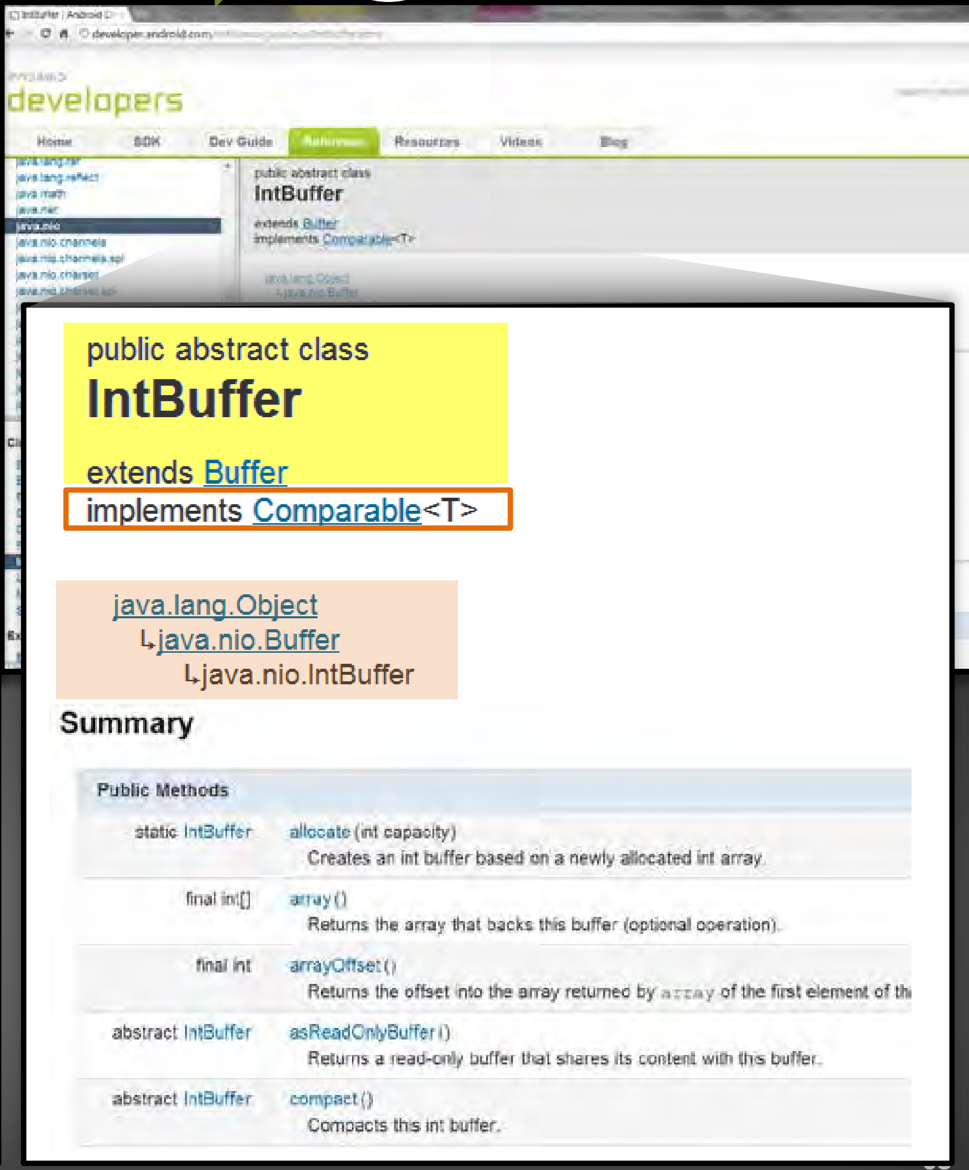
```
java.lang.Object
  └java.nio.Buffer
      └java.nio.IntBuffer
```

All Implemented Interfaces:
Comparable<IntBuffer>

```
public abstract class IntBuffer
extends Buffer
implements Comparable<IntBuffer>
```

Method Summary

static IntBuffer	allocate(int capacity) Allocates a new int buffer.
int[]	array() Returns the int array that backs this buffer *(optional operation)*.
int	arrayOffset() Returns the offset within this buffer's backing array of the first element of the buffer *(op*
abstract IntBuffer	asReadOnlyBuffer() Creates a new, read-only int buffer that shares this buffer's content.
abstract IntBuffer	compact() Compacts this buffer *(optional operation)*.
int	compareTo(IntBuffer that) Compares this buffer to another.



developers

Home SDK Dev Guide Reference Resources Videos Blog

java.lang.ref
java.lang.reflect
java.math
java.net
java.nio
java.nio.channels
java.nio.channels.spi
java.nio.charset
java.nio.charset.spi

public abstract class
IntBuffer

extends Buffer
implements Comparable<T>

java.lang.Object
  ↳java.nio.Buffer
    ↳java.nio.IntBuffer

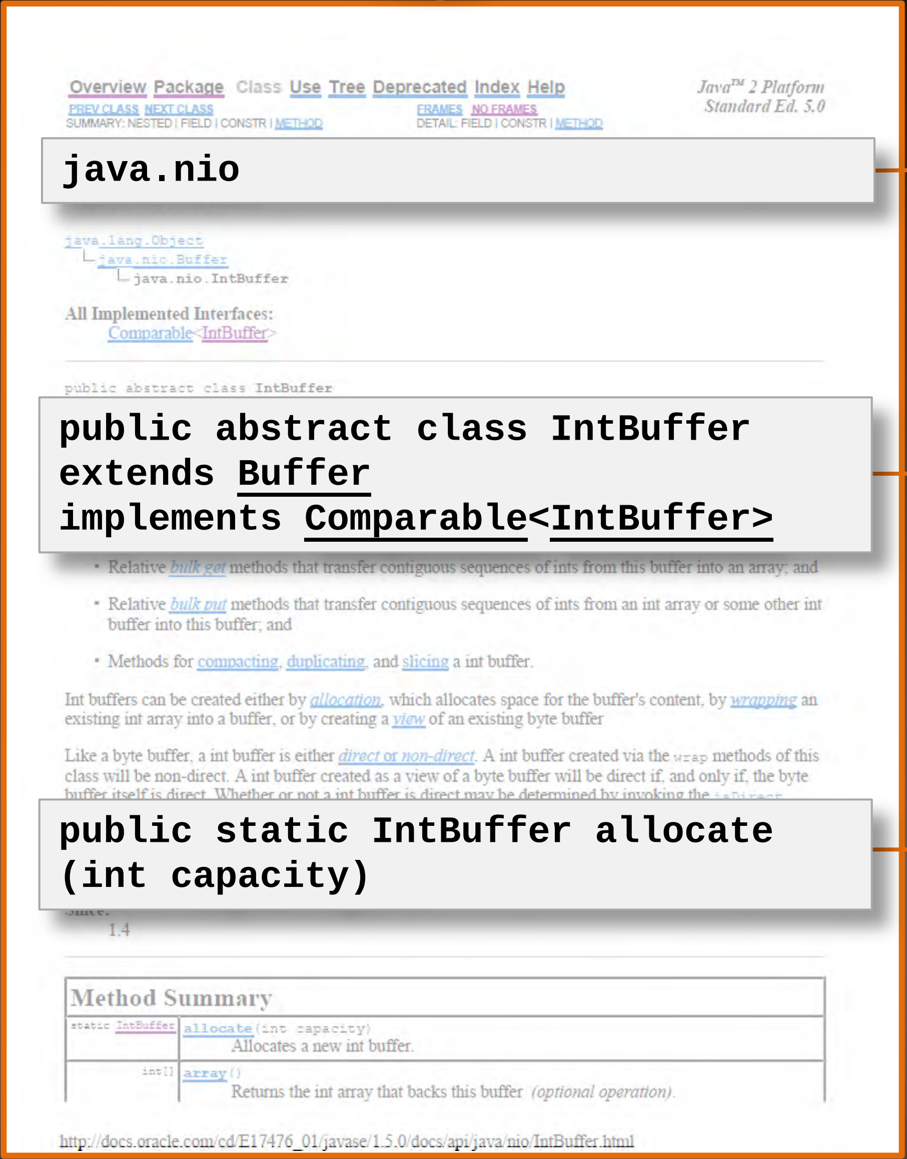
Summary

Public Methods	
static IntBuffer	allocate(int capacity) Creates an int buffer based on a newly allocated int array.
final int[]	array() Returns the array that backs this buffer (optional operation).
final int	arrayOffset() Returns the offset into the array returned by array of the first element of th
abstract IntBuffer	asReadOnlyBuffer() Returns a read-only buffer that shares its content with this buffer.
abstract IntBuffer	compact() Compacts this int buffer.

Android Source Code Is Based On Java API Designs

API

CODE



Overview Package Class Use Tree Deprecated Index Help

Java™ 2 Platform Standard Ed. 5.0

PREV CLASS NEXT CLASS FRAMES NO FRAMES

SUMMARY: NESTED | FIELD | CONSTR | METHOD DETAIL: FIELD | CONSTR | METHOD

```
java.nio
```

```
java.lang.Object
  └java.nio.Buffer
      └java.nio.IntBuffer
```

All Implemented Interfaces:
Comparable<IntBuffer>

```
public abstract class IntBuffer
```

```
public abstract class IntBuffer
extends Buffer
implements Comparable<IntBuffer>
```

- Relative *bulk get* methods that transfer contiguous sequences of ints from this buffer into an array; and
- Relative *bulk put* methods that transfer contiguous sequences of ints from an int array or some other int buffer into this buffer; and
- Methods for compacting, duplicating, and slicing a int buffer.

Int buffers can be created either by *allocation*, which allocates space for the buffer's content, by *wrapping* an existing int array into a buffer, or by creating a *view* of an existing byte buffer

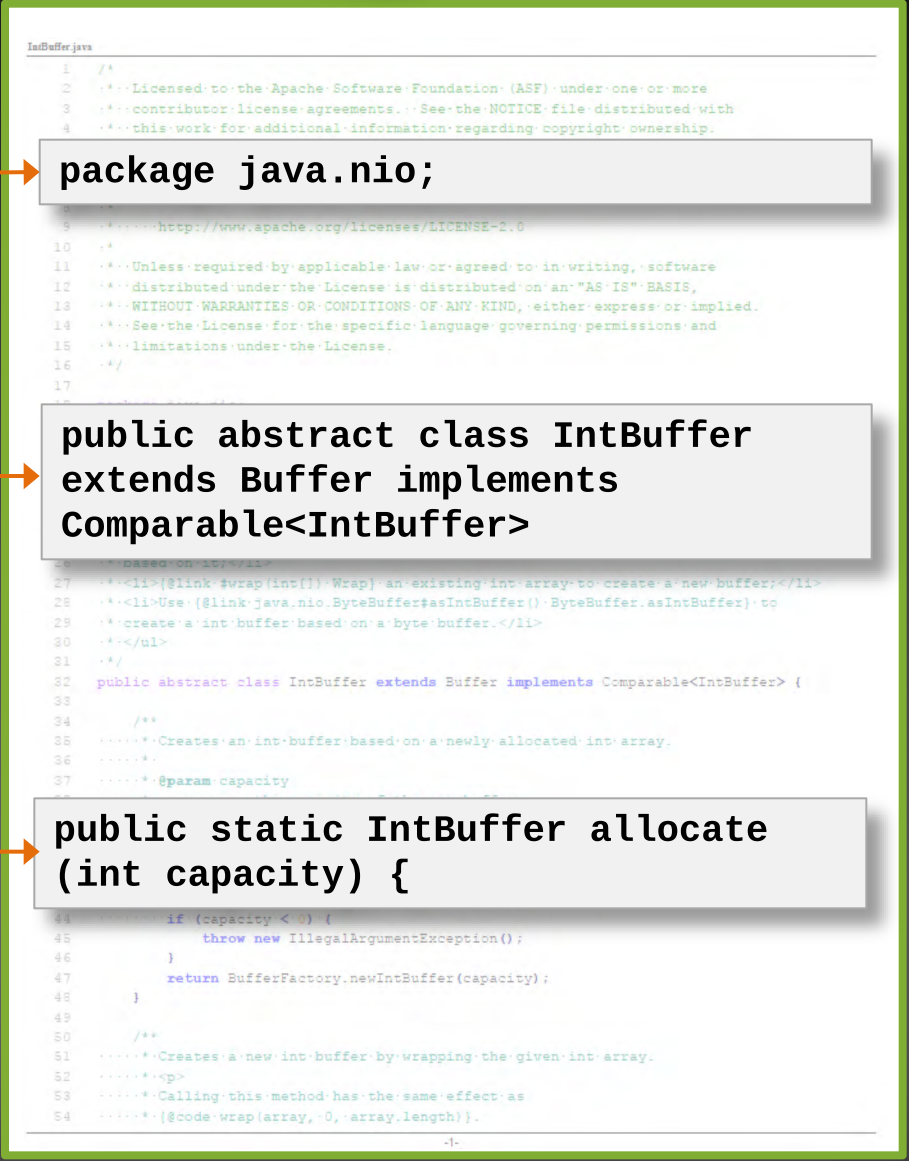
Like a byte buffer, a int buffer is either *direct or non-direct*. A int buffer created via the `wrap` methods of this class will be non-direct. A int buffer created as a view of a byte buffer will be direct if, and only if, the byte buffer itself is direct. Whether or not a int buffer is direct may be determined by invoking the `isDirect`

```
public static IntBuffer allocate
(int capacity)
```

Since:
1.4

Method Summary	
`static IntBuffer`	`allocate(int capacity)` Allocates a new int buffer.
`int[]`	`array()` Returns the int array that backs this buffer *(optional operation)*.

http://docs.oracle.com/cd/E17476_01/javase/1.5.0/docs/api/java/nio/IntBuffer.html



IntBuffer.java

```
/*
·*··Licensed·to·the·Apache·Software·Foundation·(ASF)·under·one·or·more
·*··contributor·license·agreements.··See·the·NOTICE·file·distributed·with
·*··this·work·for·additional·information·regarding·copyright·ownership.
```

```
package java.nio;
```

```
·*
·*·····http://www.apache.org/licenses/LICENSE-2.0
·*
·*··Unless·required·by·applicable·law·or·agreed·to·in·writing,·software
·*··distributed·under·the·License·is·distributed·on·an·"AS·IS"·BASIS,
·*··WITHOUT·WARRANTIES·OR·CONDITIONS·OF·ANY·KIND,·either·express·or·implied.
·*··See·the·License·for·the·specific·language·governing·permissions·and
·*··limitations·under·the·License.
·*/

package java.nio;
```

```
public abstract class IntBuffer
extends Buffer implements
Comparable<IntBuffer>
```

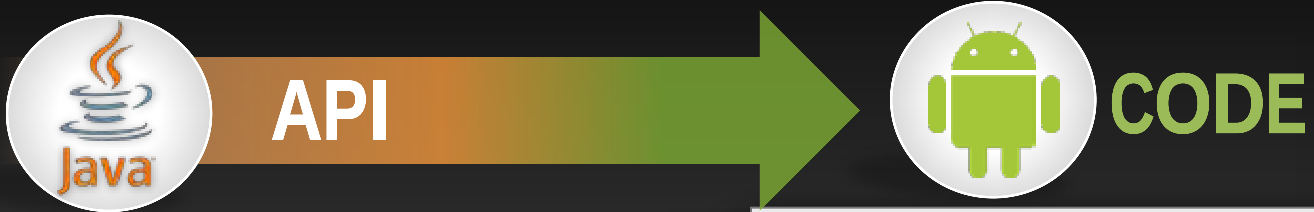
```
·*·based·on·it;</li>
·*·<li>{@link·#wrap(int[])·Wrap}·an·existing·int·array·to·create·a·new·buffer;</li>
·*·<li>Use·{@link·java.nio.ByteBuffer#asIntBuffer()·ByteBuffer.asIntBuffer}·to
·*·create·a·int·buffer·based·on·a·byte·buffer.</li>
·*·</ul>
·*/
public abstract class IntBuffer extends Buffer implements Comparable<IntBuffer> {

    /**
·····*·Creates·an·int·buffer·based·on·a·newly·allocated·int·array.
·····*·
·····*·@param·capacity
```

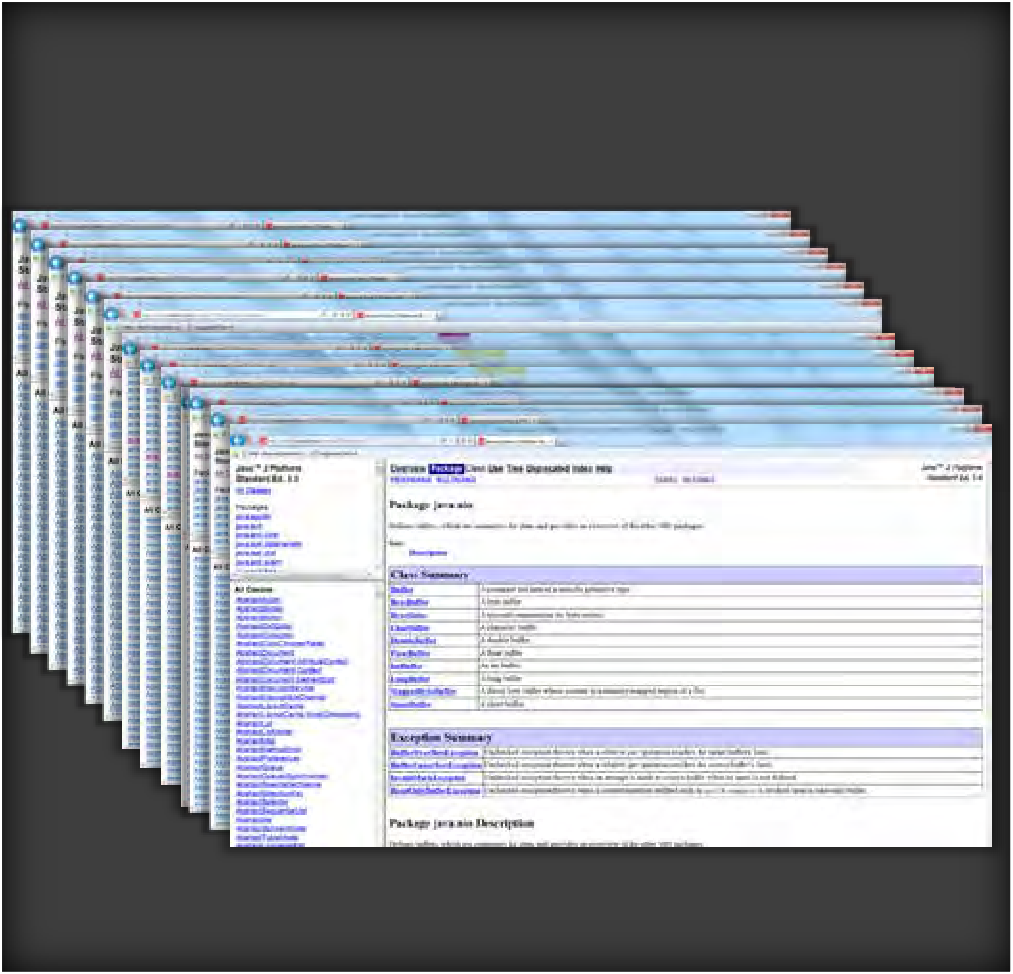
```
public static IntBuffer allocate
(int capacity) {
```

```
········if·(capacity·<·0)·{
            throw new IllegalArgumentException();
        }
        return BufferFactory.newIntBuffer(capacity);
    }

    /**
·····*·Creates·a·new·int·buffer·by·wrapping·the·given·int·array.
·····*·<p>
·····*·Calling·this·method·has·the·same·effect·as
·····*·{@code·wrap(array,·0,·array.length)}.
```

-1-

Android Source Code Is Based On Java API Designs





Package java.nio

Defines buffers, which are containers for data, and provides an overview of the other NIO packages.

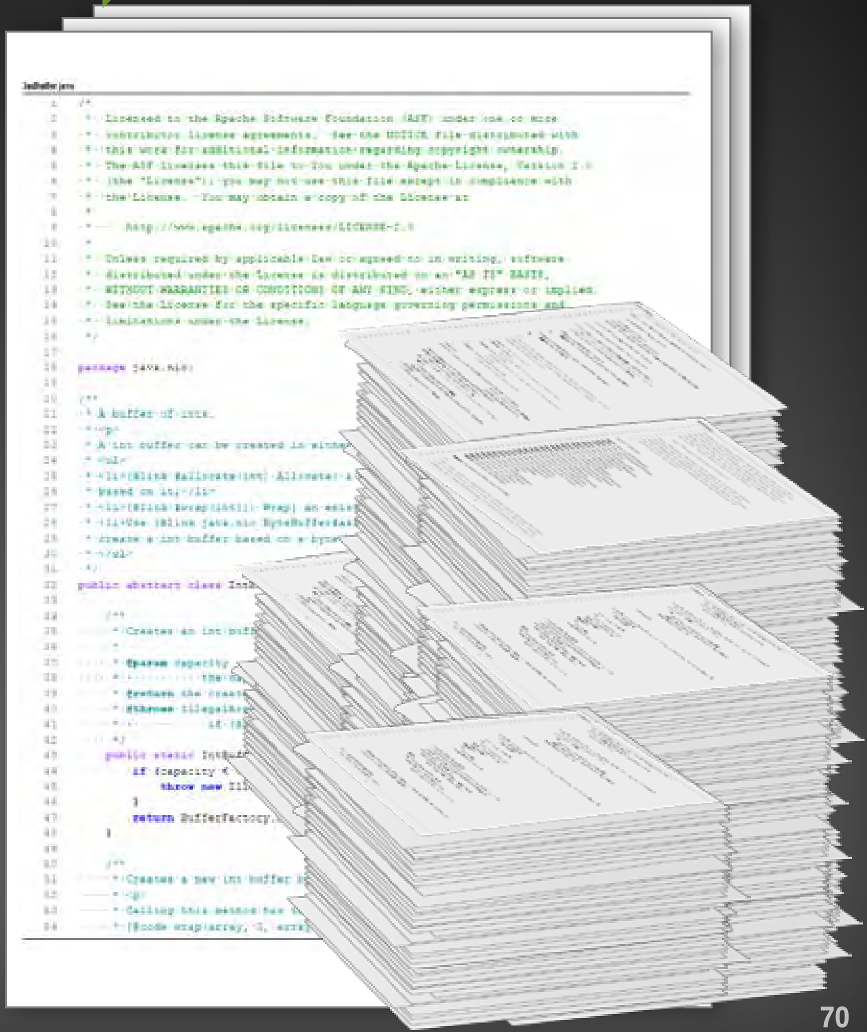
See:
Description

Class Summary	
Buffer	A container for data of a specific primitive type.
ByteBuffer	A byte buffer.
ByteOrder	A typesafe enumeration for byte orders.
CharBuffer	A character buffer.
DoubleBuffer	A double buffer.
FloatBuffer	A float buffer.
IntBuffer	An int buffer.
LongBuffer	A long buffer.
MappedByteBuffer	A direct byte buffer whose content is a memory-mapped region of a file.
ShortBuffer	A short buffer.

Exception Summary	
BufferOverflowException	Unchecked exception thrown when a relative put operation reaches the target buffer's limit.
BufferUnderflowException	Unchecked exception thrown when a relative get operation reaches the source buffer's limit.
InvalidMarkException	Unchecked exception thrown when an attempt is made to reset a buffer when its mark is not defined.
ReadOnlyBufferException	Unchecked exception thrown when a content-mutation method such as put or compact is invoked upon a read-only buffer.

Package java.nio Description

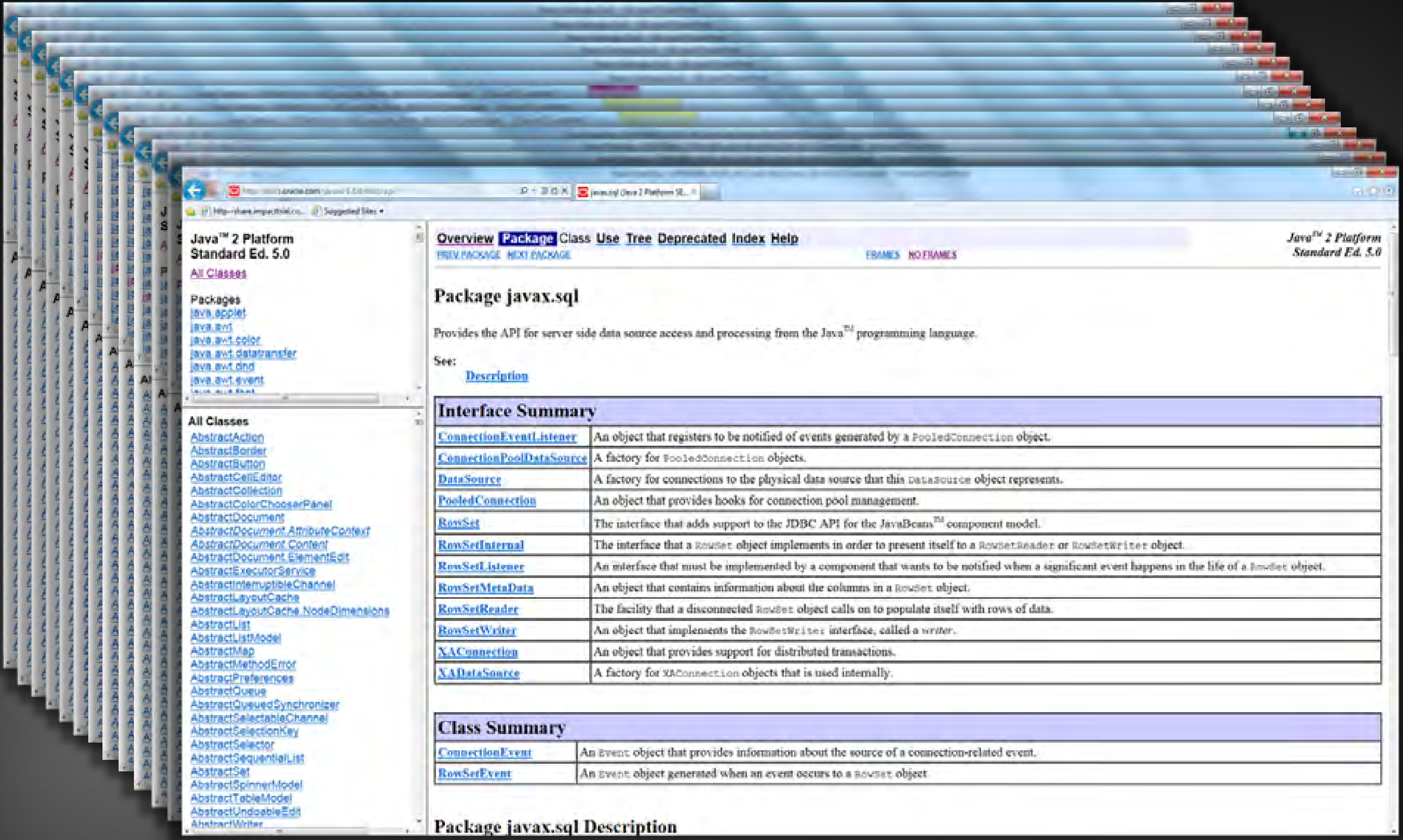
Defines buffers, which are containers for data, and provides an overview of the other NIO packages.



IntBuffer.java

```
/*
 *  Licensed to the Apache Software Foundation (ASF) under one or more
 *  contributor license agreements.  See the NOTICE file distributed with
 *  this work for additional information regarding copyright ownership.
 *  The ASF licenses this file to You under the Apache License, Version 2.0
 *  (the "License"); you may not use this file except in compliance with
 *  the License.  You may obtain a copy of the License at
 *
 *     http://www.apache.org/licenses/LICENSE-2.0
 *
 *  Unless required by applicable law or agreed to in writing, software
 *  distributed under the License is distributed on an "AS IS" BASIS,
 *  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 *  See the License for the specific language governing permissions and
 *  limitations under the License.
 */

package java.nio;

/**
 * A buffer of ints.
 * <p>
 * A int buffer can be created in either
 * <ul>
 * <li>{@link #allocate(int) Allocate} a
 * based on it;</li>
 * <li>{@link #wrap(int[]) Wrap} an exist
 * <li>Use {@link java.nio.ByteBuffer#asI
 * create a int buffer based on a byte
 * </ul>
 */
public abstract class IntB

    /**
     * Creates an int buff
     *
     * @param capacity
     *            the ca
     * @return the creat
     * @throws IllegalArg
     *             if (ca
     */
    public static IntBuff
        if (capacity <
            throw new Ill
        }
        return BufferFactory.
    }

    /**
     * Creates a new int buffer b
     * <p>
     * Calling this method has th
     * {@code wrap(array, 0, array
```

The Copied Java API Designs And Documentation Span Thousands Of Printed Pages



Java™ 2 Platform
Standard Ed. 5.0

All Classes

Packages
java.applet
java.awt
java.awt.color
java.awt.datatransfer
java.awt.dnd
java.awt.event

All Classes
AbstractAction
AbstractBorder
AbstractButton
AbstractCellEditor
AbstractCollection
AbstractColorChooserPanel
AbstractDocument
AbstractDocument.AttributeContext
AbstractDocument.Content
AbstractDocument.ElementEdit
AbstractExecutorService
AbstractInterruptibleChannel
AbstractLayoutCache
AbstractLayoutCache.NodeDimensions
AbstractList
AbstractListModel
AbstractMap
AbstractMethodError
AbstractPreferences
AbstractQueue
AbstractQueuedSynchronizer
AbstractSelectableChannel
AbstractSelectionKey
AbstractSelector
AbstractSequentialList
AbstractSet
AbstractSpinnerModel
AbstractTableModel
AbstractUndoableEdit
AbstractWriter

Overview Package Class Use Tree Deprecated Index Help
PREV PACKAGE NEXT PACKAGE
FRAMES NO FRAMES

Java™ 2 Platform
Standard Ed. 5.0

Package javax.sql

Provides the API for server side data source access and processing from the Java™ programming language.

See:
Description

Interface Summary	
ConnectionEventListener	An object that registers to be notified of events generated by a `PooledConnection` object.
ConnectionPoolDataSource	A factory for `PooledConnection` objects.
DataSource	A factory for connections to the physical data source that this `DataSource` object represents.
PooledConnection	An object that provides hooks for connection pool management.
RowSet	The interface that adds support to the JDBC API for the JavaBeans™ component model.
RowSetInternal	The interface that a `RowSet` object implements in order to present itself to a `RowSetReader` or `RowSetWriter` object.
RowSetListener	An interface that must be implemented by a component that wants to be notified when a significant event happens in the life of a `RowSet` object.
RowSetMetaData	An object that contains information about the columns in a `RowSet` object.
RowSetReader	The facility that a disconnected `RowSet` object calls on to populate itself with rows of data.
RowSetWriter	An object that implements the `RowSetWriter` interface, called a *writer*.
XAConnection	An object that provides support for distributed transactions.
XADataSource	A factory for `XAConnection` objects that is used internally.

Class Summary	
ConnectionEvent	An `Event` object that provides information about the source of a connection-related event.
RowSetEvent	An `Event` object generated when an event occurs to a `RowSet` object.

Package javax.sql Description

Google Employees Consulted Sun's Copyrighted Java Materials When Implementing Android

Bob Lee
Individual Dep.
66:1-6, 17-19,
Aug. 3, 2011

Q. Did you **consult the Java docs** when doing your work on the API implementations for Android?

A. **Yes.**

Q. Okay. And where did you obtain those Java docs?

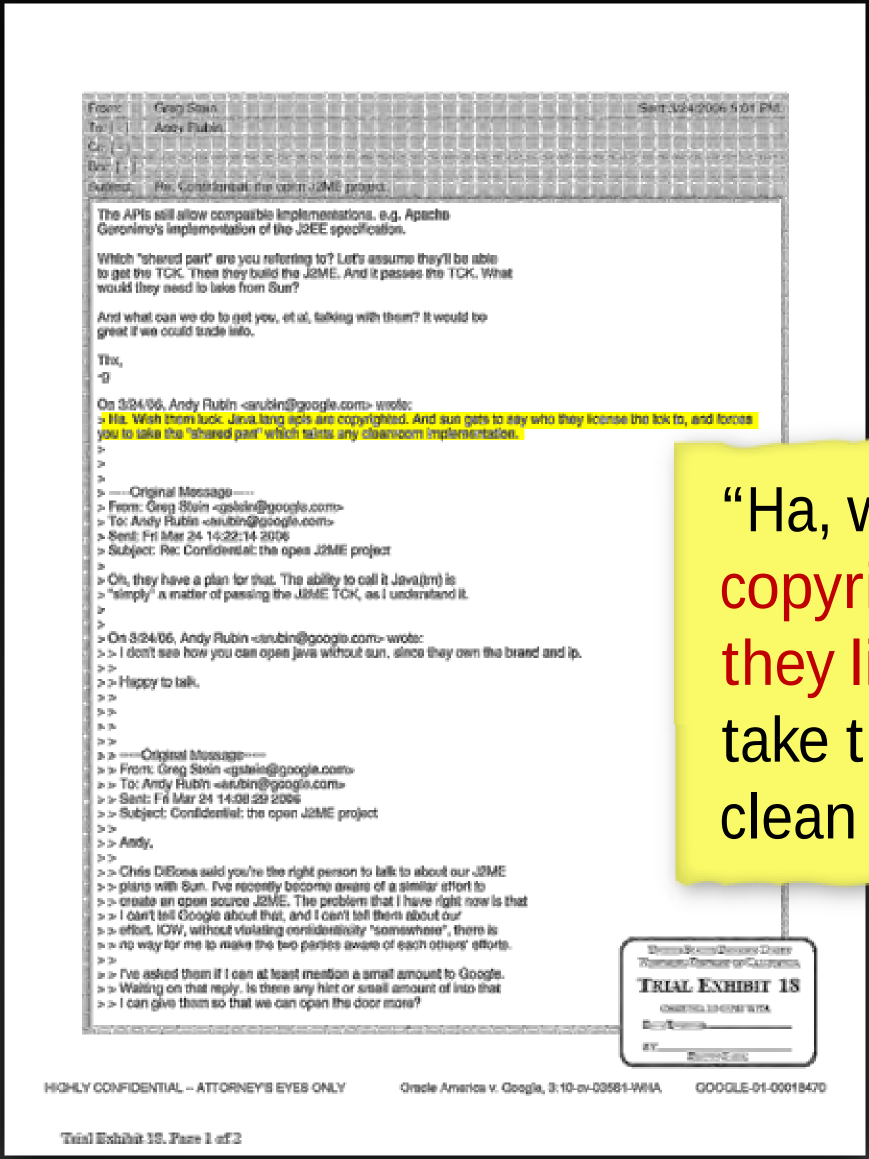
A. They're posted for free **on Sun's website**...

* * *

Q. Did you observe any **copyright notices** on the specifications?

A. **Yes.**

Google Knew It Needed A License For Copyrighted Java APIs



```
From:    Greg Stein                                   Sent: 3/24/2006 5:01 PM
To: [ - ]    Andy Rubin
Cc: [ - ]
Bcc: [ - ]
Subject:   Re: Confidential: the open J2ME project

The APIs still allow compatible implementations, e.g. Apache
Geronimo's implementation of the J2EE specification.

Which "shared part" are you referring to? Let's assume they'll be able
to get the TCK. Then they build the J2ME. And it passes the TCK. What
would they need to take from Sun?

And what can we do to get you, et al, talking with them? It would be
great if we could trade info.

Thx,
-g

On 3/24/06, Andy Rubin <arubin@google.com> wrote:
> Ha. Wish them luck. Java.lang apis are copyrighted. And sun gets to say who they license the tck to, and forces
you to take the "shared part" which taints any cleanroom implementation.
>
>
>
> -----Original Message-----
> From: Greg Stein <gstein@google.com>
> To: Andy Rubin <arubin@google.com>
> Sent: Fri Mar 24 14:22:14 2006
> Subject: Re: Confidential: the open J2ME project
>
> Oh, they have a plan for that. The ability to call it Java(tm) is
> "simply" a matter of passing the J2ME TCK, as I understand it.
>
>
> On 3/24/06, Andy Rubin <arubin@google.com> wrote:
> > I don't see how you can open java without sun, since they own the brand and ip.
> >
> > Happy to talk.
> >
> >
> >
> >
> > -----Original Message-----
> > From: Greg Stein <gstein@google.com>
> > To: Andy Rubin <arubin@google.com>
> > Sent: Fri Mar 24 14:08:29 2006
> > Subject: Confidential: the open J2ME project
> >
> > Andy,
> >
> > Chris DiBona said you're the right person to talk to about our J2ME
> > plans with Sun. I've recently become aware of a similar effort to
> > create an open source J2ME. The problem that I have right now is that
> > I can't tell Google about that, and I can't tell them about our
> > effort. IOW, without violating confidentiality "somewhere", there is
> > no way for me to make the two parties aware of each others' efforts.
> >
> > I've asked them if I can at least mention a small amount to Google.
> > Waiting on that reply. Is there any hint or small amount of info that
> > I can give them so that we can open the door more?
```

United States District Court
Northern District of California
TRIAL EXHIBIT 18
CASE NO. 10-03561 WHA
Date Entered
By
Deputy Clerk

HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY   Oracle America v. Google, 3:10-cv-03561-WHA   GOOGLE-01-00018470

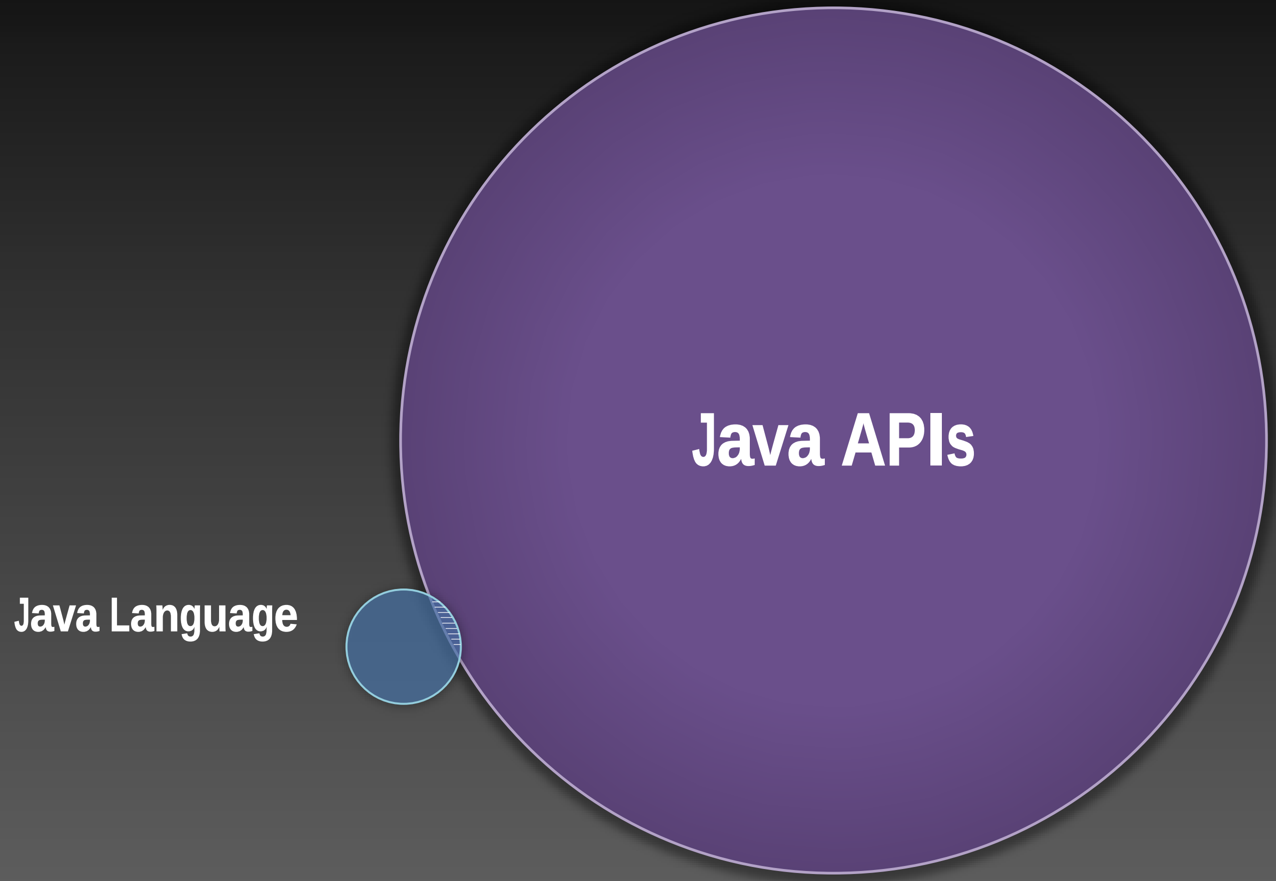
Trial Exhibit 18, Page 1 of 2

TX 18 at GOOGLE-01-00018470

From: Andy Rubin
To: Greg Stein
Sent: March 24, 2006

"Ha, wish them luck. Java.lang api's are copyrighted. And Sun gets to say who they license the tck to, and forces you to take the 'shared part' which taints any clean room implementation."

The Java Programming Language And The Java APIs Are Different Things

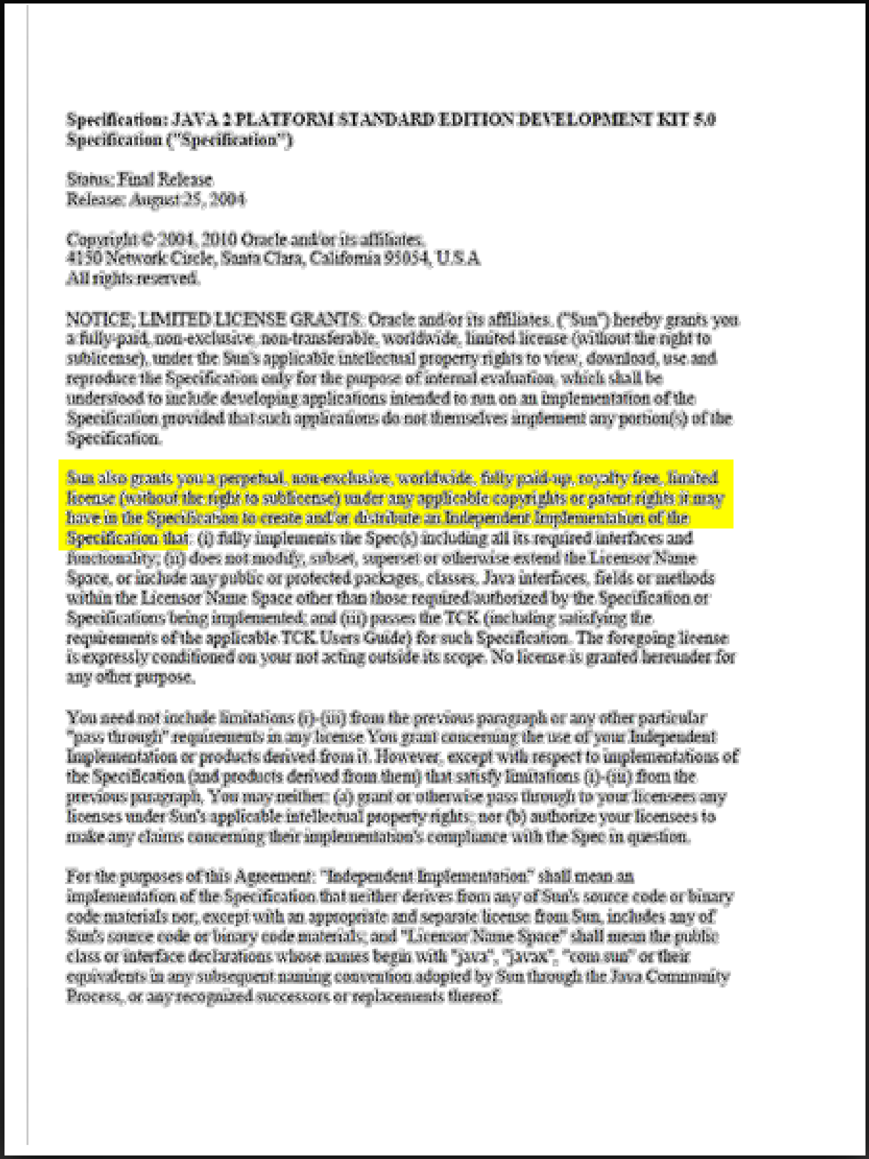


“‘Java may refer to three ***very different things***: the Java programming language, the Java Application Programming Interfaces (APIs), or software source code that references and implements the APIs.”

- Google Copyright Expert Owen Astrachan

Google’s copying fragmented Java

Java Specification License Requirements Are Designed To Avoid Fragmentation



Specification: JAVA 2 PLATFORM STANDARD EDITION DEVELOPMENT KIT 5.0
Specification ("Specification")

Status: Final Release
Release: August 25, 2004

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You need not include limitations (i)-(iii) from the previous paragraph or any other particular "pass through" requirements in any license You grant concerning the use of your Independent Implementation or products derived from it. However, except with respect to implementations of the Specification (and products derived from them) that satisfy limitations (i)-(iii) from the previous paragraph, You may neither: (a) grant or otherwise pass through to your licensees any licenses under Sun's applicable intellectual property rights; nor (b) authorize your licensees to make any claims concerning their implementation's compliance with the Spec in question.

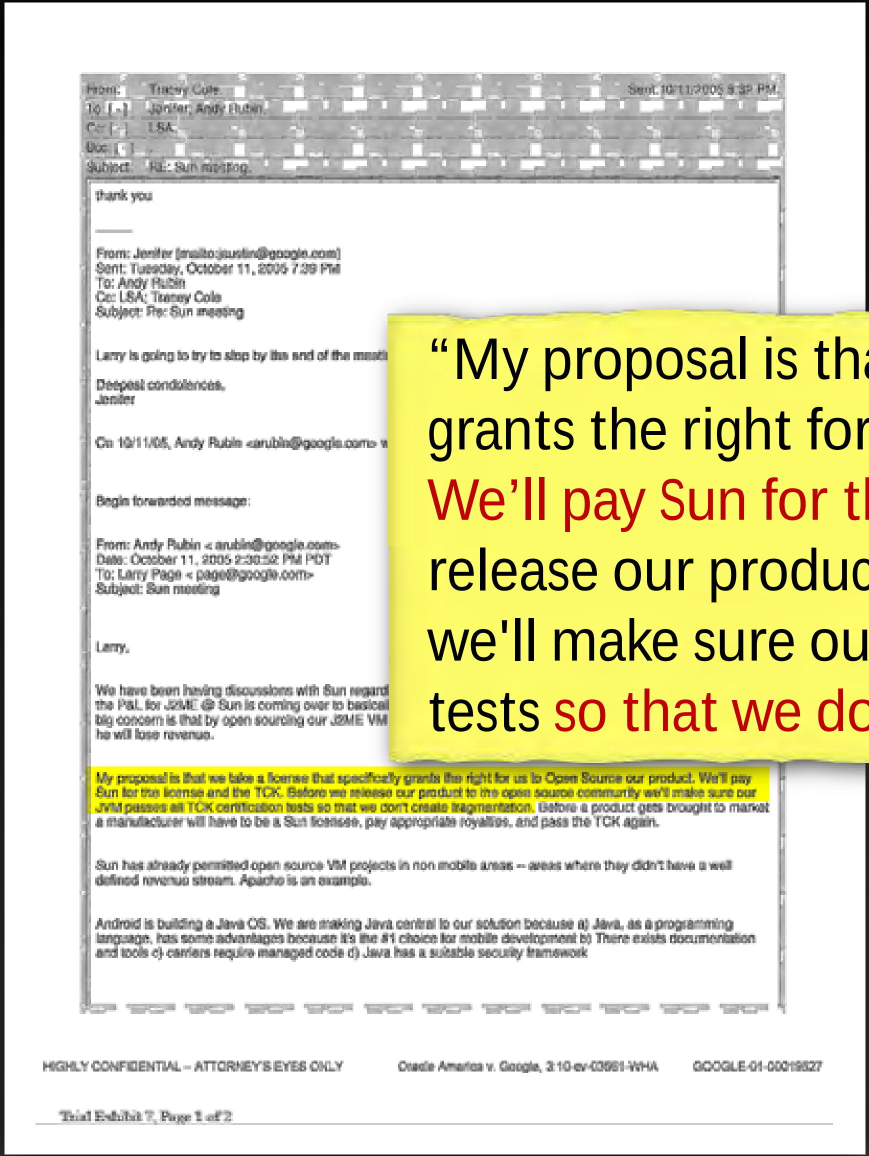
For the purposes of this Agreement: "Independent Implementation" shall mean an implementation of the Specification that neither derives from any of Sun's source code or binary code materials nor, except with an appropriate and separate license from Sun, includes any of Sun's source code or binary code materials; and "Licensor Name Space" shall mean the public class or interface declarations whose names begin with "java", "javax", "com.sun" or their equivalents in any subsequent naming convention adopted by Sun through the Java Community Process, or any recognized successors or replacements thereof.

TX 610 OAGOOGLE0100067301 at 5/jdk-1_5_0-doc/docs/relnotes/license.html

License Requirements:

- Adhere to Java requirements
- Don't do less or more than what is required
- Do a "clean room" implementation
- License and pass compatibility tests

Google Understood That It Should Avoid Fragmenting Java



From: Tracey Cole Sent: 10/11/2005 9:32 PM
To: [-] Jenifer; Andy Rubin
Cc: [-] LSA
Bcc: [-]
Subject: RE: Sun meeting

thank you

From: Jenifer [mailto:jsustin@google.com]
Sent: Tuesday, October 11, 2005 7:39 PM
To: Andy Rubin
Cc: LSA; Tracey Cole
Subject: Re: Sun meeting

Larry is going to try to stop by the end of the meeti

Deepest condolences,
Jenifer

On 10/11/05, Andy Rubin <arubin@google.com> w

Begin forwarded message:

From: Andy Rubin < arubin@google.com>
Date: October 11, 2005 2:30:52 PM PDT
To: Larry Page < page@google.com>
Subject: Sun meeting

Larry,

We have been having discussions with Sun regard
the P&L for J2ME @ Sun is coming over to basical
big concern is that by open sourcing our J2ME VM
he will lose revenue.

My proposal is that we take a license that specifically grants the right for us to Open Source our product. We'll pay Sun for the license and the TCK. Before we release our product to the open source community we'll make sure our JVM passes all TCK certification tests so that we don't create fragmentation. Before a product gets brought to market a manufacturer will have to be a Sun licensee, pay appropriate royalties, and pass the TCK again.

Sun has already permitted open source VM projects in non mobile areas -- areas where they didn't have a well defined revenue stream. Apache is an example.

Android is building a Java OS. We are making Java central to our solution because a) Java, as a programming language, has some advantages because it's the #1 choice for mobile development b) There exists documentation and tools c) carriers require managed code d) Java has a suitable security framework

HIGHLY CONFIDENTIAL – ATTORNEY'S EYES ONLY Oracle America v. Google, 3:10-cv-03561-WHA GOOGLE-01-00019527

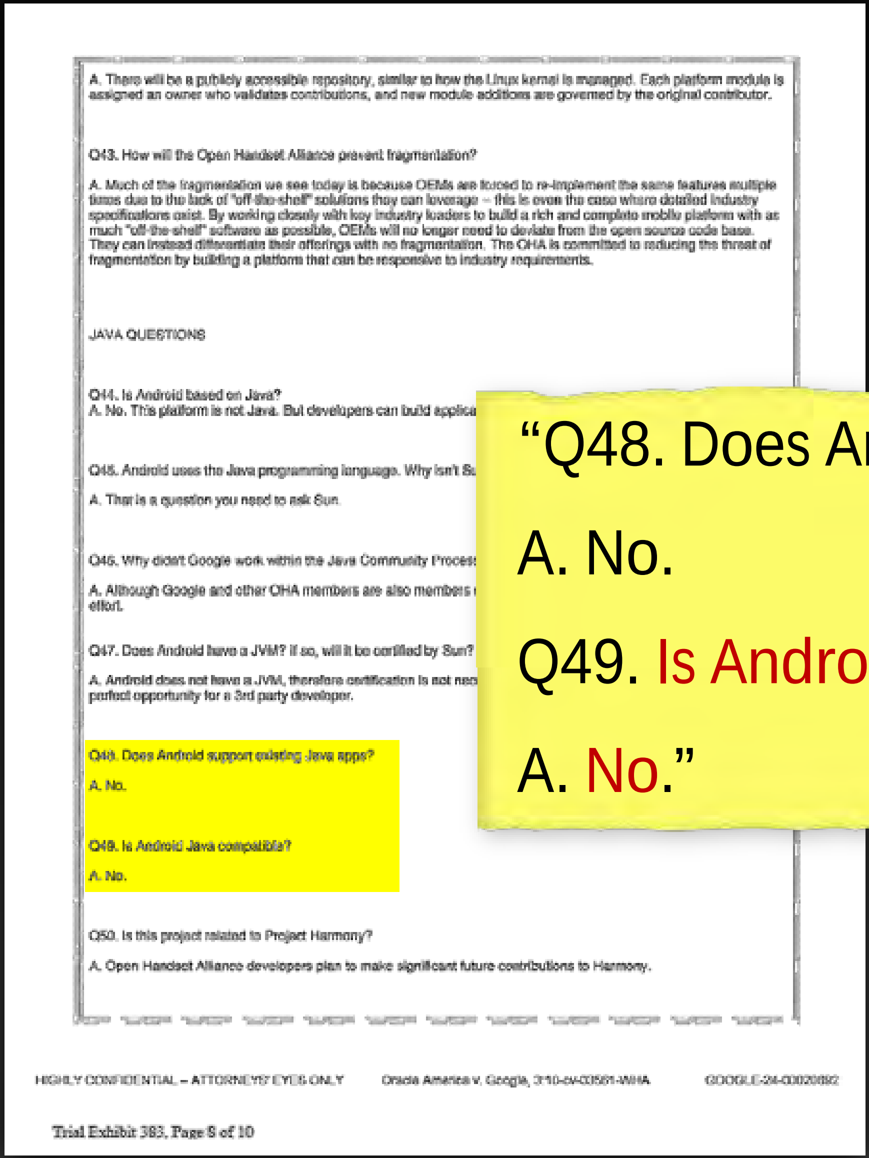
Trial Exhibit 7, Page 1 of 2

From: Andy Rubin
To: Larry Page
Sent: October 11, 2005

"My proposal is that we take a license that specifically grants the right for us to Open Source our product. We'll pay Sun for the license and the TCK. Before we release our product to the open source community we'll make sure our JVM passes all TCK certification tests so that we don't create fragmentation."

TX 7 at GOOGLE-01-00019527

Android Fragmented Java



A. There will be a publicly accessible repository, similar to how the Linux kernel is managed. Each platform module is assigned an owner who validates contributions, and new module additions are governed by the original contributor.

Q43. How will the Open Handset Alliance prevent fragmentation?

A. Much of the fragmentation we see today is because OEMs are forced to re-implement the same features multiple times due to the lack of "off-the-shelf" solutions they can leverage – this is even the case where detailed industry specifications exist. By working closely with key industry leaders to build a rich and complete mobile platform with as much "off-the-shelf" software as possible, OEMs will no longer need to deviate from the open source code base. They can instead differentiate their offerings with no fragmentation. The OHA is committed to reducing the threat of fragmentation by building a platform that can be responsive to industry requirements.

JAVA QUESTIONS

Q44. Is Android based on Java?
A. No. This platform is not Java. But developers can build applica

Q45. Android uses the Java programming language. Why isn't Su

A. That is a question you need to ask Sun.

Q46. Why didn't Google work within the Java Community Process

A. Although Google and other OHA members are also members
effort.

Q47. Does Android have a JVM? If so, will it be certified by Sun?

A. Android does not have a JVM, therefore certification is not nec
perfect opportunity for a 3rd party developer.

Q48. Does Android support existing Java apps?

A. No.

Q49. Is Android Java compatible?

A. No.

Q50. Is this project related to Project Harmony?

A. Open Handset Alliance developers plan to make significant future contributions to Harmony.

HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY Oracle America v. Google, 3:10-cv-03561-WHA GOOGLE-24-00020892

Trial Exhibit 383, Page 8 of 10

TX 383 at GOOGLE-24-00020892

From: Rich Miner
To: Dave Burke
Sent: November 6, 2007

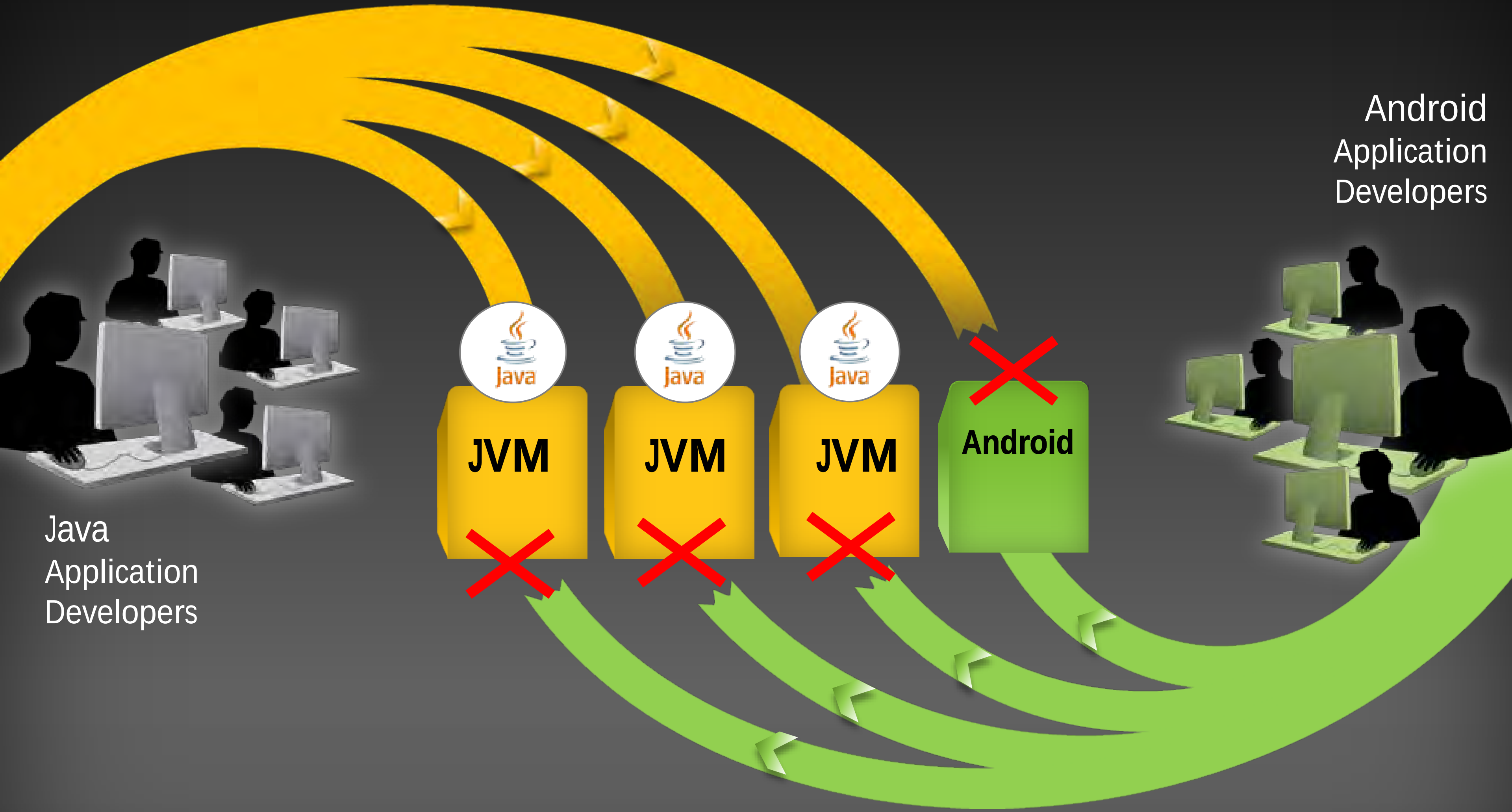
"Q48. Does Android support existing Java apps?

A. No.

Q49. Is Android Java compatible?

A. No."

Android Fragmented Java Application Developer Community



“Clean room” development
is not an out for Google

Android Is Not A Clean Room Implementation

Java
CODE
CODE

rangeCheck() from Oracle java.util.arrays.java	rangeCheck() from Android TimSort.java
private static void rangeCheck(int arrayLen, int fromIndex, int toIndex) { if (fromIndex > toIndex)	private static void rangeCheck(int arrayLen, int fromIndex, int toIndex) { if (fromIndex > toIndex)
throw new IllegalArgumentException("fromIndex(" + fromIndex + ") > toIndex(" + toIndex+")");	throw new IllegalArgumentException("fromIndex(" + fromIndex + ") > toIndex(" + toIndex+")");

if (fromIndex < 0)
throw new ArrayIndexOutOfBoundsException(fromIndex);
	if (fromIndex < 0)
	throw new ArrayIndexOutOfBoundsException(fromIndex);

if (toIndex > arrayLen)
throw new ArrayIndexOutOfBoundsException(toIndex);
}
	if (toIndex > arrayLen)
	throw new ArrayIndexOutOfBoundsException(toIndex);
	}

Google Literally Copied Java Code

Android Is Not A Clean Room Implementation

Joshua Bloch
Individual Dep.
181:7-14,
July 8, 2011

Q. Do you have a recollection of **accessing Sun code** while you were working on TimSort?

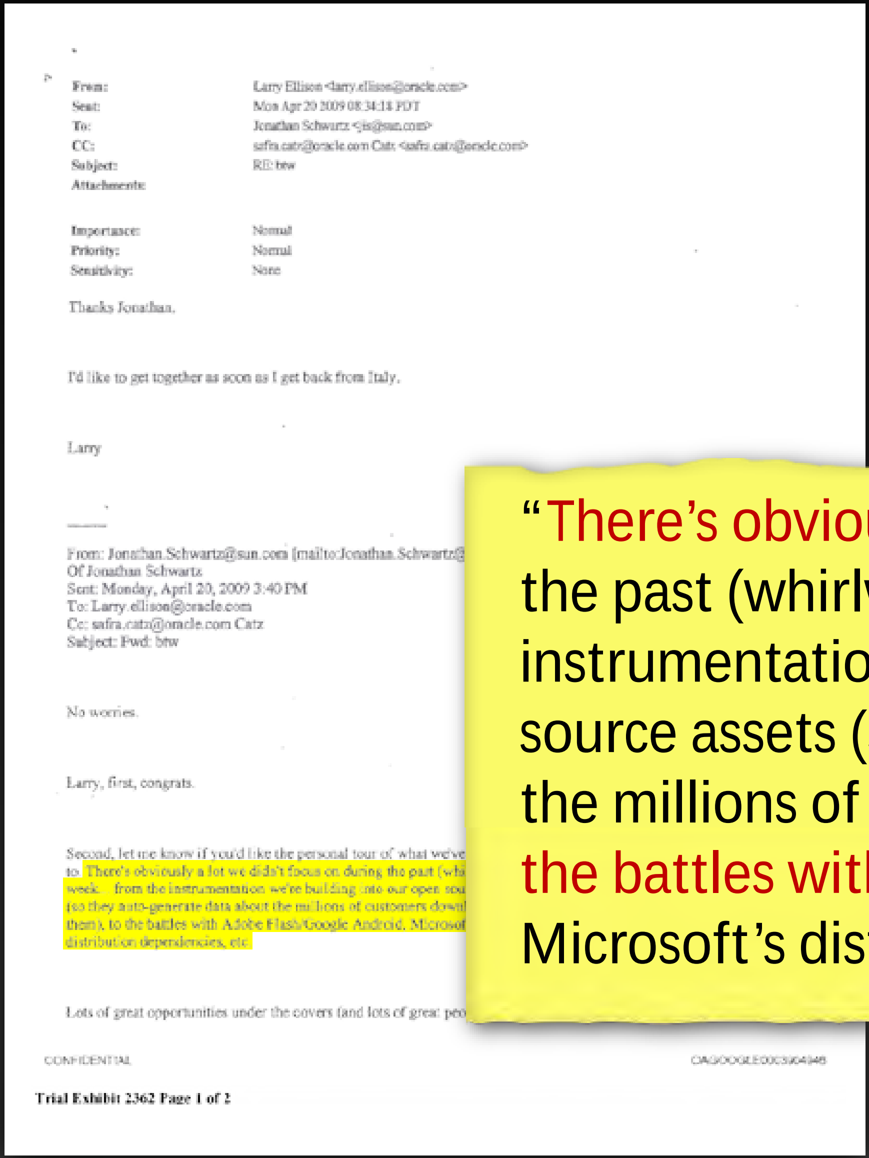
A. I don't have a recollection, but **I'm perfectly willing to believe that I did**. You know, I think the similarity of the signature, the fact that, you know, the three arguments are in the same order and have the same name, you know, is a strong indication that it is **likely that I did**.

Google Literally Copied Java Code

Oracle has been harmed

Java community has been harmed

Sun Warned Oracle About Google/Oracle Battle



From: Larry Ellison <larry.ellison@oracle.com>
Sent: Mon Apr 20 2009 08:34:14 PDT
To: Jonathan Schwartz <js@sun.com>
CC: safra.catz@oracle.com Catz <safra.catz@oracle.com>
Subject: RE: btw
Attachments:

Importance: Normal
Priority: Normal
Sensitivity: None

Thanks Jonathan.

I'd like to get together as soon as I get back from Italy.

Larry

From: Jonathan.Schwartz@sun.com [mailto:Jonathan.Schwartz@
Of Jonathan Schwartz
Sent: Monday, April 20, 2009 3:40 PM
To: Larry.ellison@oracle.com
Cc: safra.catz@oracle.com Catz
Subject: Fwd: btw

No worries.

Larry, first, congrats.

Second, let me know if you'd like the personal tour of what we've
to. There's obviously a lot we didn't focus on during the past (whi
week... from the instrumentation we're building into our open sou
(so they auto-generate data about the millions of customers downl
them), to the battles with Adobe Flash/Google Android, Microsof
distribution dependencies, etc.

Lots of great opportunities under the covers (and lots of great peo

CONFIDENTIAL

OAGOOGLE0003904946

Trial Exhibit 2362 Page 1 of 2

From: Jonathan Schwartz
To: Larry Ellison
Sent: April 20, 2009

"There's obviously a lot we didn't focus on during the past (whirlwind) week... from the instrumentation we're building into our open source assets (so they auto-generate data about the millions of customers downloading them), to the battles with Adobe Flash/Google Android, Microsoft's distribution dependencies, etc."

TX 2362 at OAGOOGLE0003904946

Java Technology and Licensing

Google’s Need for Java Technology and License

Google’s Infringement

What We Will Prove

Why We Are Here

From: Tim L
To: Andy Ru
Sent: Augus
"What w be o (by Larry and Sergei) is to investigate what technical nd Chrome. d think they negotiate a eed."

From: Tim Lindholm

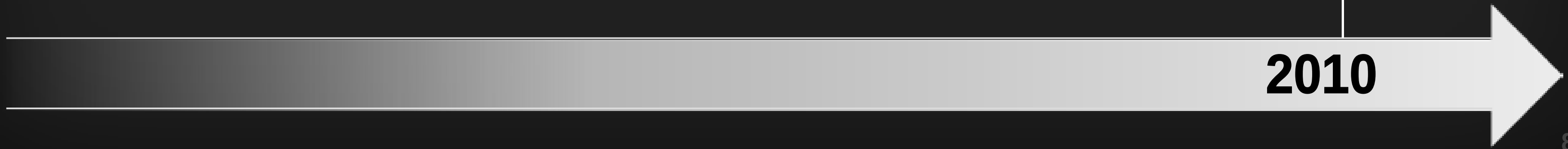
To: Andy Rubin

Sent: August 6, 2010

"What we've actually been asked to do (by Larry and Sergei) is to investigate what technical alternatives exist to Java for Android and Chrome. We've been over a bunch of these, and think they all suck. We conclude that we need to negotiate a license for Java under the terms we need."

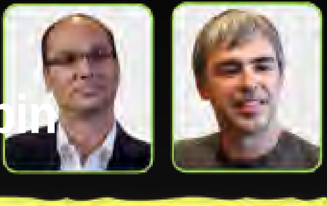
TX 10 at GOOGLE-12-10000022

August 6, 2010
Google internally concludes alternates to Java "suck" and that Google needs to "negotiate a license for Java"



Google Foreshadowed This Day

From: Andy Rubin
To: Larry Page
Sent: October 11, 2005



From: Andy Rubin

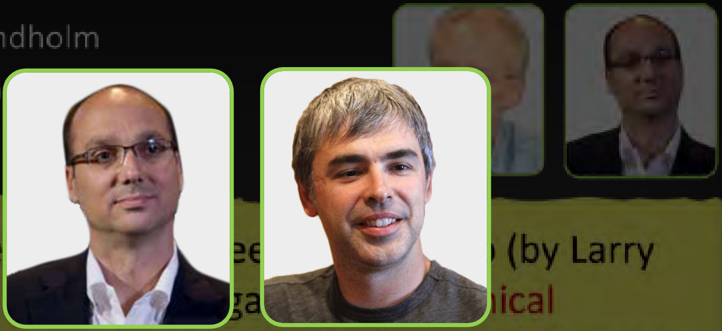
To: Larry Page

Sent: October 11, 2005

"If Sun doesn't want to work with us, we have two options: 1) Abandon our work and adopt MSFT CLR VM and C# language - or - 2) Do Java anyway and defend our d... along the wa...

TX 7 at GOOGLE-01-000...

From: Tim Lindholm
To: Andy Rub...
Sent: August



"What we ... (by Larry and Serge... ...ical alternatives exist to Java for Android and Chrome. ... think they ... negotiate a ...ed."

"If Sun doesn't want to work with us, we have two options: 1) Abandon our work and adopt MSFT CLR VM and C# language - or - 2) Do Java anyway and defend our decision, perhaps making enemies along the way."

TX 7 at GOOGLE-01-00019528

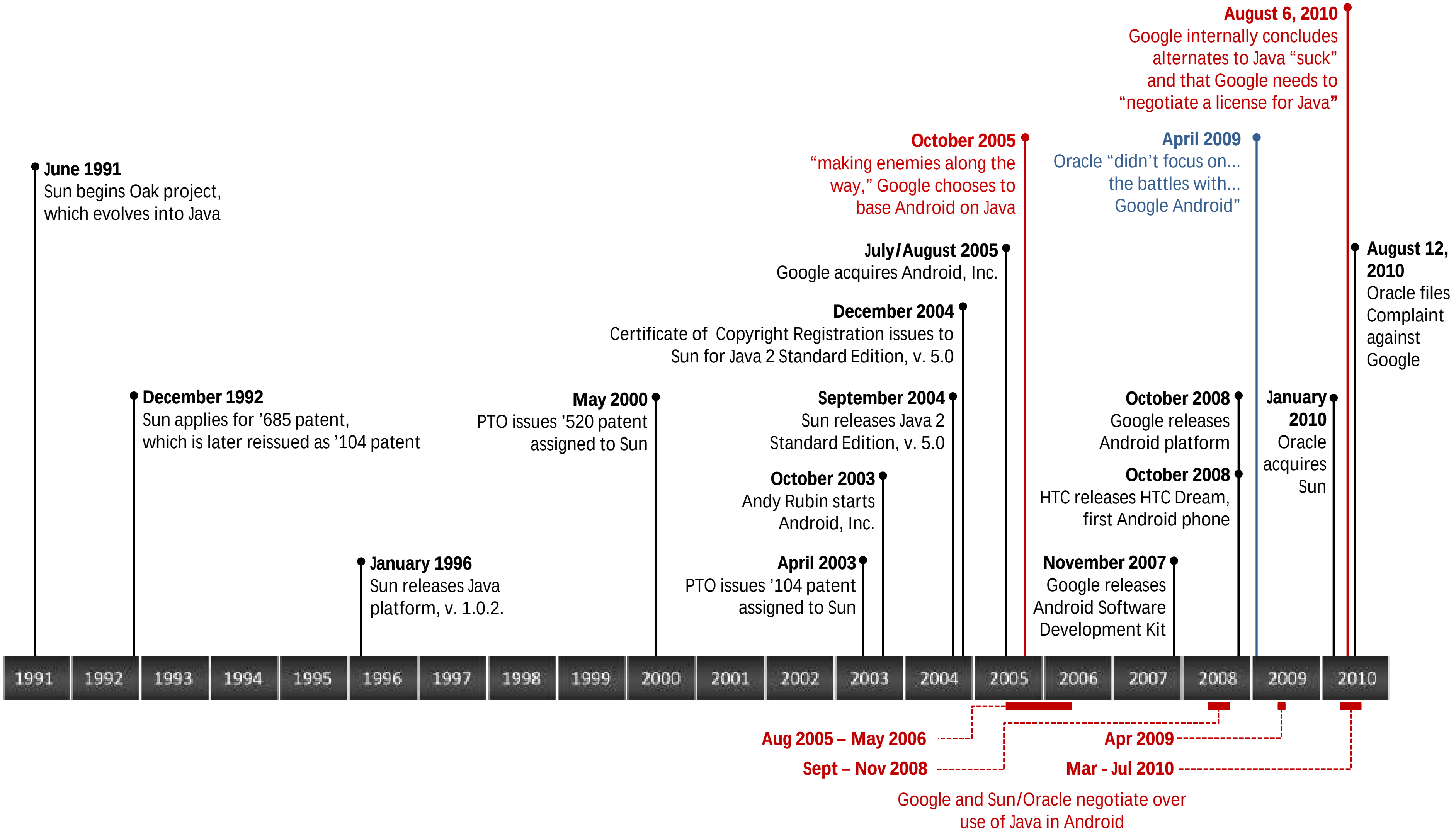
Google chooses to base Android on Java

alternates to Java "suck" and that Google needs to "negotiate a license for Java"

2005

2010

Timeline



June 1991
Sun begins Oak project, which evolves into Java

December 1992
Sun applies for '685 patent, which is later reissued as '104 patent

January 1996
Sun releases Java platform, v. 1.0.2.

May 2000
PTO issues '520 patent assigned to Sun

April 2003
PTO issues '104 patent assigned to Sun

October 2003
Andy Rubin starts Android, Inc.

September 2004
Sun releases Java 2 Standard Edition, v. 5.0

December 2004
Certificate of Copyright Registration issues to Sun for Java 2 Standard Edition, v. 5.0

July/August 2005
Google acquires Android, Inc.

October 2005
"making enemies along the way," Google chooses to base Android on Java

November 2007
Google releases Android Software Development Kit

October 2008
Google releases Android platform

October 2008
HTC releases HTC Dream, first Android phone

April 2009
Oracle "didn't focus on... the battles with... Google Android"

January 2010
Oracle acquires Sun

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Google internally concludes alternates to Java "suck" and that Google needs to "negotiate a license for Java"

August 12, 2010
Oracle files Complaint against Google

Aug 2005 – May 2006

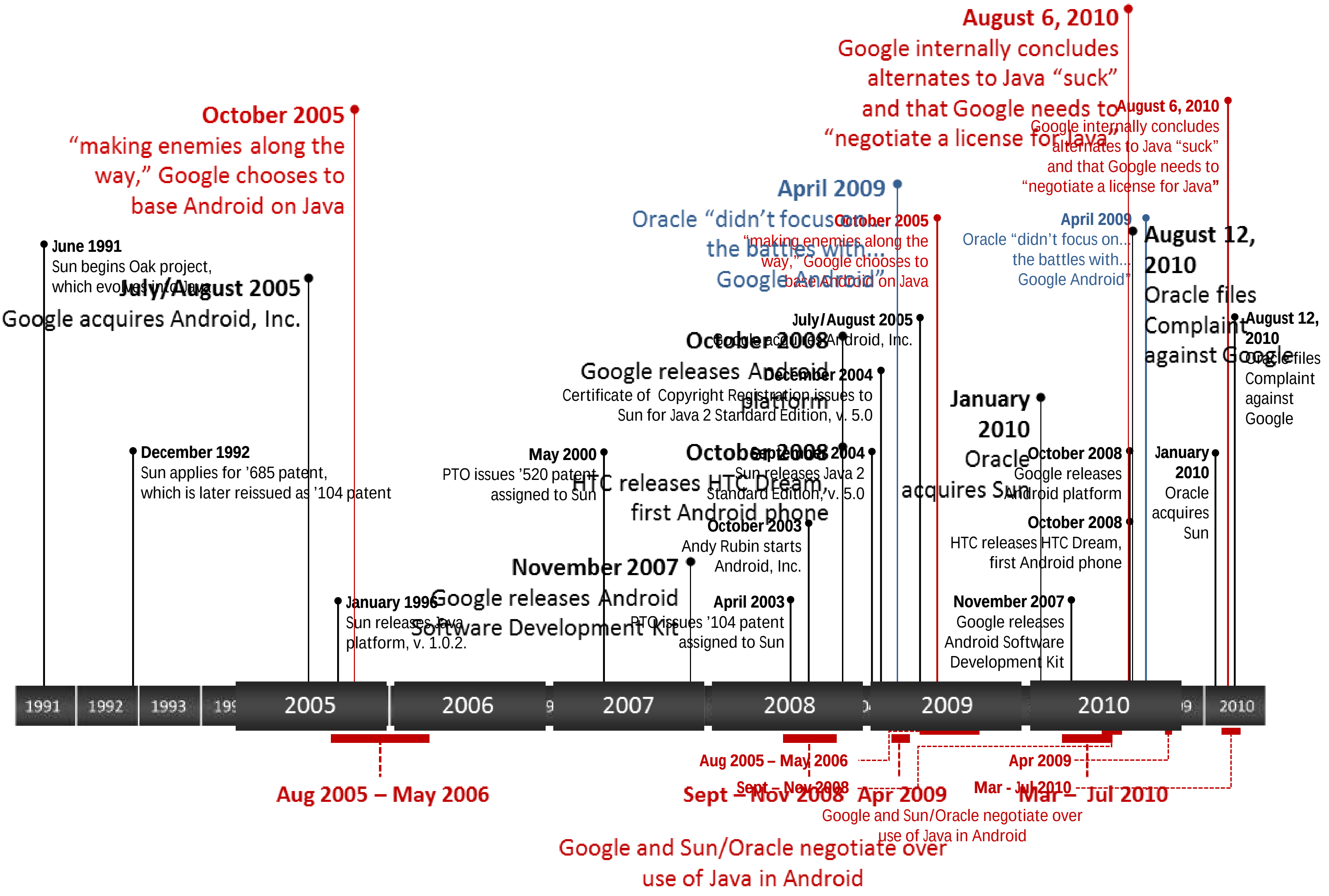
Sept – Nov 2008

Apr 2009

Mar - Jul 2010

Google and Sun/Oracle negotiate over use of Java in Android

Timeline



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What Google Said Before Lawsuit

Jul 26, 2005:	“Must take license from Sun”
Oct 11, 2005:	“We’ll pay Sun for the license and the TCK” “We are making Java central to our solution”
Feb 10, 2006:	“helping negotiate with my old team at Sun for a critical license”
Mar 24, 2006:	“Java.lang api’s are copyrighted”
Sept 28, 2006:	“Leverage Java for its existing base of developers”
Nov 6, 2007:	“Is Android Java compatible?...No.”
Nov 17, 2007:	“Scrub out a few more J’s”
Mar 24, 2008:	“Please don’t demonstrate to any sun employees or lawyers”
Aug 5, 2009:	“How aggressive do we scrub the J word?”
Aug 6, 2010:	“technical alternatives…to Java for Android…suck” “we need to negotiate a license for Java under the terms we need”
Oct 13, 2011:	“Android is hugely profitable”

What Will Google Tell You Now?

What We Will Prove

- Google decided to copy Oracle’s Java intellectual property for Android
- Google did so to leverage Java technology and developer community
- Google knew it needed a license to use that intellectual property
- Google took no license
- Google profits immensely
- Google is liable for infringement