Intellectual Property of F/OSS

Case Study: iText

a Free/Open Source Java-PDF library

Bruno Lowagie

F/OSS and IP

- iText was started by one person in 1998
- Another developer joined in 2000
- From then on the product grows organically:
  It's a joined effort of many different people
- But who is the owner of the code?
  Who owns the Intellectual Property?

Your product

White zone

Gray zone

Black zone

The White Zone

- You have written the code yourself, but
  - What about your employer? Does your employer own (part of) the code? Do you have a formal agreement with your employer with respect to F/OSS?
  - Where did you get your inspiration? IBM developers are forbidden to look at any code that is not formally approved by IBM's legal team. Good practice or burden?

Employers and IP

http://www.1t3xt.com
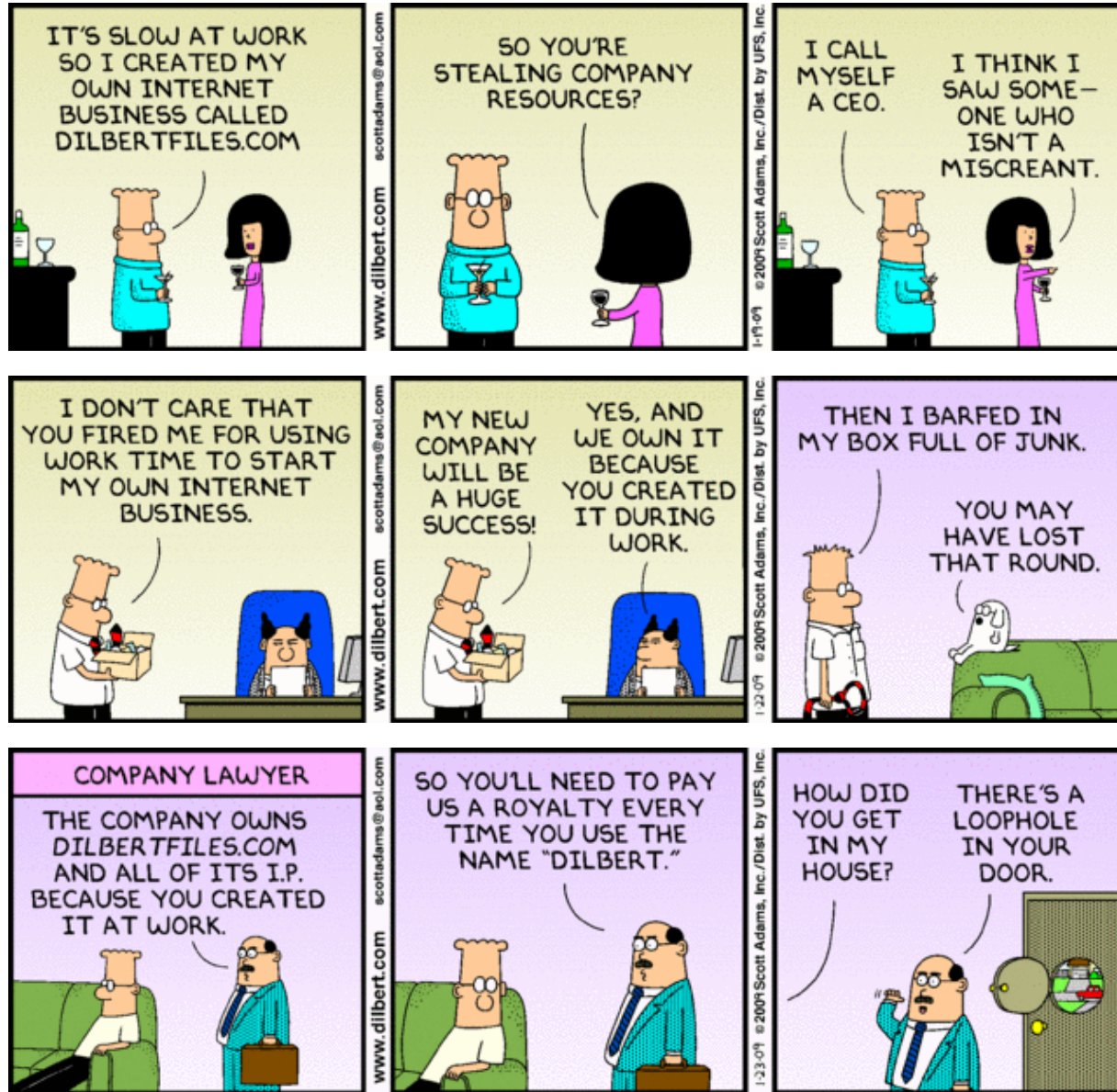
The Gray Zone

White zone

Gray zone

Black zone

The Gray Zone

- The code was contributed, but:
  - Did the contributor agree with the license?
  - Did the contributor's employer agree?
  - Where did the contributor get his inspiration?
- The code is taken from another project, but:
  - Are the licenses compatible?
  - Do you respect the other project's license?
  - Where did the other project get its code from?

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The Gray Zone

- Contributor License Agreements
  - The Apache Foundation demands contributors and their employers to sign a CLA
  - SUN demands contributors to sign an SCA from the moment the contributions contain more than 20 lines of code

- Check License Compatibility
  - Keep a detailed inventory of all F/OSS Projects (subset / derivative work)

The Black Zone

White zone

Gray zone

Black zone

The Black Zone

- Unfortunately it may happen that you weren't allowed to use some specific code that is part of your project.

- Solution:
    - either you ask (and get!) permission,
    - or you remove the code.

In practice

- I'm a developer
- I started writing a PDF library in 1998
- It was first published online in 1999
- It was completely refactored in 2000
- Many people contributed, and…
- IANAL!!! (= **I A**m **N**ot **A L**awyer)
- 2006: who owns the IP of iText?

IP Project

- July 2006: Eclipse Simultaneous Release
  - "Callisto"; tested and approved by IBM
- Eclipse/BIRT (Actuate) is part of this release
  - Project led by Actuate
- iText is used in Eclipse/BIRT
  - License MPL: not acceptable for IBM
  - Research Agreement between Actuate and Ghent University with as deliverable: IP Review

Example 1

- State machine to parse XML quickly:

- Source taken from/inspired by:
  – http://www.javaworld.com/javaworld/javatips/ jw-javatip128.html

- Read the fine print!

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Java Tip 128: Create a quick-and-dirty XML parser

Parse valid XML using minimal code

By Steven R. Brandt, JavaWorld.com, 05/31/02

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dzone

XML is a popular data format for several reasons: it is human readable, self-describing, and portable. Unfortunately, many Java-based XML parsers are very large; for example, Sun Microsystems' `jaxp.jar` and `parser.jar` libraries are 1.4 MB each. If you are running with limited memory (for example, in a J2ME (Java 2 Platform, Micro Edition) environment), or bandwidth is at a premium (for example, in an applet), using those large parsers might not be a viable solution.

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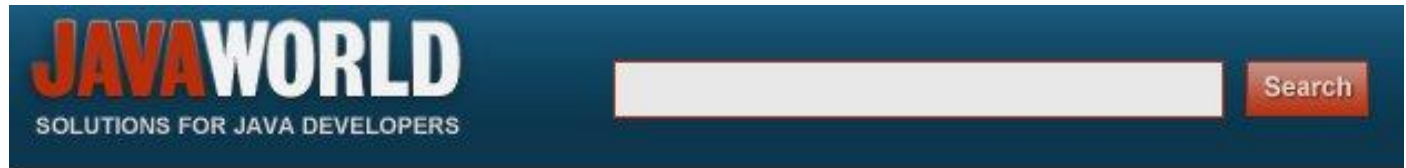
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Solution 1

- Write JavaWorld and author, get permission!

- Note: there were many other places where licenses were incomplete or missing!

- It must become your second nature to ask for permission and to document! document! document!

Example 2

- **Names and variables referring to RC4**
  - RC4 was initially a trade secret, but in September 1994 a description of it was anonymously posted to the Cypherpunks mailing list.
  - It was soon posted on the sci.crypt newsgroup, and from there to many sites on the Internet. Because the algorithm is known, it is no longer a trade secret.
  - The name "RC4" is trademarked, however. The current status seems to be that "unofficial" implementations are legal, but cannot use the RC4 name.

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Solution 2

- RC4 is often referred to as "ARCFOUR" or "ARC4" (meaning Alleged RC4, because RSA has never officially released the algorithm), to avoid possible trademark problems.

- Change all class and variable names:

  for instance change RC4_ENCRYPTION into ARCFOUR_ENCRYPTION

Example 3
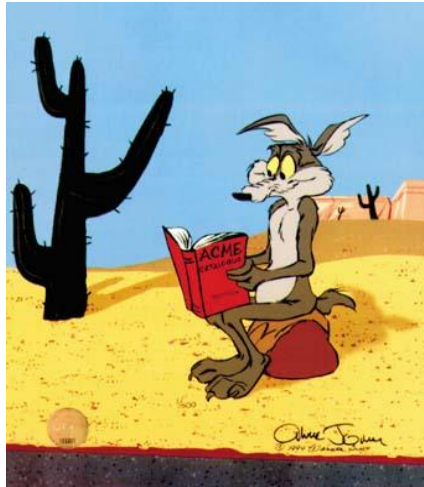
Class IntHashtable

Code taken from ACME.com:

```
// This is 90% based on JavaSoft's java.util.Hashtable.
// Visit the ACME Labs Java page for up-to-date versions
// of this and other fine Java utilities:
// http://www.acme.com/java/
```

JavaSoft is a name used by Sun in the past in their Java activities .

Sun indicates use of the class java.util.Hashtable which is subject to unfriendly Sun license

It is unlikely that this code is available under a license that permits this use. Without information indicating that Sun approved of this usage the class should not be used.

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Solution 3

- use the same class released by Apache under the APL in Apache-Commons instead of the ACME class.

EPS Functionality in iText

Taken from an example released by SUN under a Sample License.

The Sample License allowed the use of the code, but the source code contained this text:

```
/*
 * Copyright 1998 by Sun Microsystems, Inc.,
 * 901 San Antonio Road, Palo Alto, California,
 * 94303, U.S.A. All rights reserved.
 *
 * This software is the confidential and proprietary
 * information of Sun Microsystems, Inc.
 * ("Confidential Information"). You shall not
 * disclose such Confidential Information and shall
 * use it only in accordance with the terms of the
 * license agreement you entered into with Sun.
 */
```

Solution: after a very long argument about this comment section versus the Sample License, EPS functionality was dropped.

Fedora Linux and nuclear facilities

Some code involving TIFFs was taken from the JAI library originally released by SUN under a very liberal license. However, the license text contains the following clause:

```
/*
 * You acknowledge that Software is not designed, licensed
 * or intended for use in the design, construction,
 * operation or maintenance of any nuclear facility.
 */
```

As long as the word "licensed" isn't removed, iText can't be distributed with Fedora Linux.

Solution: direct communication with the core developers to solve the problem.

Contributors

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Acknowledgments

1T3XT, the iText Company, would like to express its gratitude to the people and companies listed on this page. Over the years, many people have contributed code in the form of a series of source files, a diff patch, a bugfix,... and so forth. Thanks!

Core Development

Bruno Lowagie, Howard Shank, Kevin Day, Mark Storer, Paulo Soares, Xavier Le Vourch

Code Contributions

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Acknowledgments Info: People

Phillip Pan

Philip wrote several classes concerning Colors and Patterns.

Category

registered in the category "Code Contributions"

Class files

[core] com/lowagie/text/Jpeg.java
  Philip posted a fix for JPEG CMYK images
[core] com/lowagie/text/pdf/ColorDetails.java 💡
  This class was written by Phillip
[core] com/lowagie/text/pdf/PatternColor.java 💡
  This class was written by Phillip
[core] com/lowagie/text/pdf/PdfFormField.java
  Paulo wrote this class, but he says he was inspired by Phillip's initial input: "I ended up not using his code but I got some good ideas, though."
[core] com/lowagie/text/pdf/PdfICCBased.java 💡
  This class was written by Phillip.

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PatternColor.java

General information

This class can be found in the following jar:
>itext-core.jar

In package:
>com.lowagie.text.pdf

Current version on 1t3xt.info:
- **source code**
- **Javadoc API**

Current version on SourceForge SVN:
- **log**
- **src with markup**
- **most recent source code**

Added to the CVS/SVN repository on:
>2002-02-06

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Result: 2007

- iText was shipped as part of Eclipse/BIRT with the Europa Simultaneous Release in 2007: IBM, Actuate and the Eclipse Foundation happy!

- No more doubts about the ownership iText. Maintaining a clear overview of the IP and avoiding possible IP issues in the future has become a 'second nature': Bruno happy!

- A valuable experience with a valuable result!

Thank you!

Questions are always welcome