

Making Creative Commons More Effective with Usage Management

by

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A.S., Pre-Engineering, North Iowa Area Community College, 1994

B.S., Electrical Engineering, Iowa State University, 1997

THESIS

Submitted in Partial Fulfillment of the
Requirements for the Degree of

Master of Science
Computer Engineering

The University of New Mexico

Albuquerque, New Mexico

April, 2012

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Dedication

This thesis is dedicated my wife Elisa and our two daughters Evelyn and Katherine.

Acknowledgments

I would like to thank my advisor, Professor Gregory Heileman, for his support.

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ABSTRACT OF THESIS

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Abstract

The Creative Commons provides legal and technical infrastructure that allows intellectual property to be shared in terms that are more flexible than the default “all rights reserved”. Under Creative Commons licenses, content can be distributed widely online, but still controlled with specific, well-understood common terms, such that authors reserve some rights. More and more content is being shared online under Creative Commons licenses. As such, it is very easy to create mash-ups or derivative works, based on many different assets licensed under different Creative Commons licenses. What’s not so easy is to pick a license compatible with all the different licenses inside of a derivative work or to make sure all the licenses in a derivative work are compatible with each other.

This paper looks at the conceptual and technical foundations of the Creative Commons, takes a survey of how these things are commonly used on the Internet today, and proposes

an architecture, including usage management, that can be used to make Creative Commons more effective. An implementation of the proposed architecture is presented along with a discussion on new functionality and future work it could enable.

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Glossary

RDFa Resource Description Framework – in – attributes

XDM Extensible Metadata Platform

XML eXtensible Markup Language

Chapter 1

Introduction

1.1 Motivation

Creative commons is being used more and more on the web. For example, the popular photo- and video-sharing site Flickr has published a case-study claiming that they were hosting over 200 million CC licensed images as of October 2011.[citation needed] In March of 2010, Creative Commons published a graph of the number of CC licensed images on Flickr.[citation needed] This graph showing growth from 2006 to 2010 is reproduced in figure 1.1 on page 2.

This is an incredible number of images, and Flickr is not the only place that CC licensed content can be found on the Internet. A more detailed look at CC content on the Internet is given in Section 1.3.

With all the images, video, text and other content that can be found on the web under different CC licenses, it is very easy to make a mash-up document containing “found content”. However, it is not so easy to make sure you are following all the rules when you create derivative works (mash-ups). If you combine dozens or even hundreds of assets

Chapter 1. Introduction

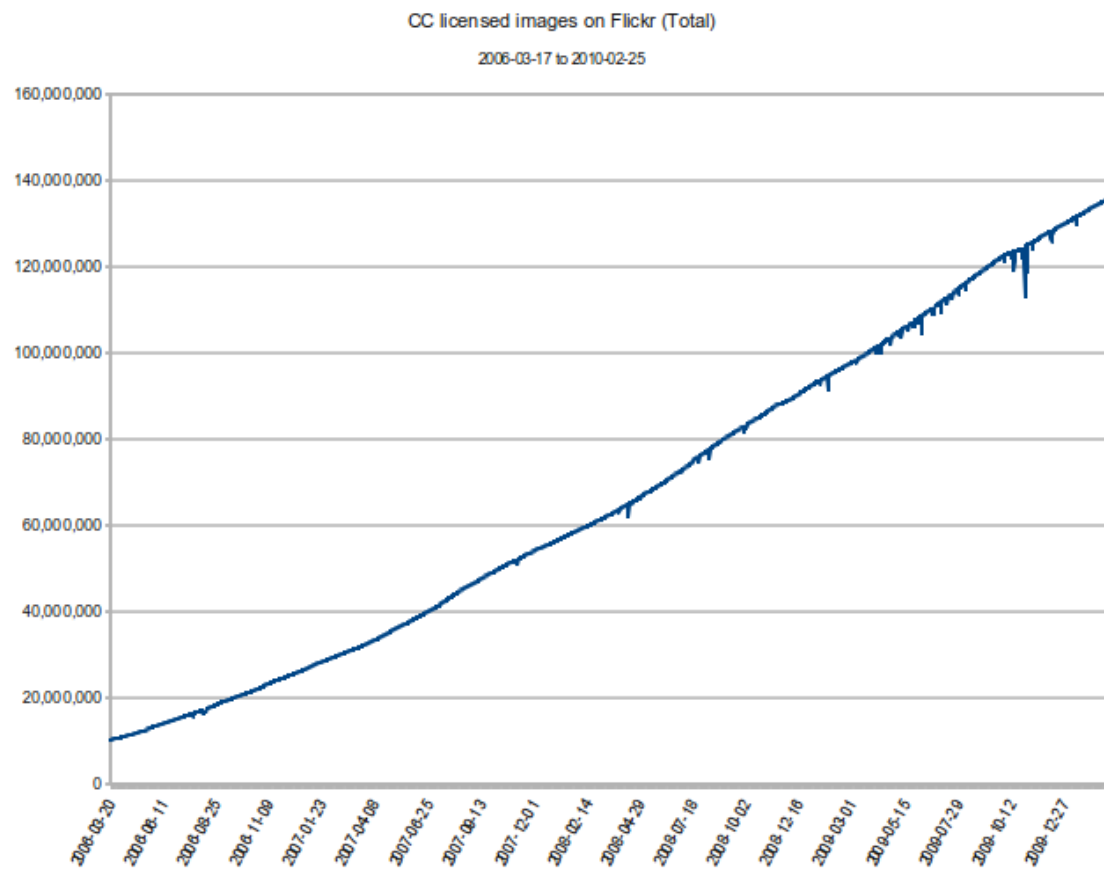


Figure 1.1: CC licensed images on Flickr (Total)

together, each of which might have a slightly different Creative Commons license, how can you ensure that your intended use is 100% compliant with all of the licensed content? Further, if an asset you want to use has a license incompatible with your intended use, is there an easy way for you to acquire an alternative license that lets you use the asset in the way you want to?

1.2 Creative Commons

1.2.1 Overview

The Creative Commons is a nonprofit organization that provides free, easy-to-use legal tools that provide a simple, standardized way to pre-clear usage rights to creative works for copyright owners. It gives copyright holders an easy way to license their works in a way that leaves “some rights reserved” as compared to the “all rights reserved” default. By providing these legal tools, the Creative Commons hopes to increase the amount of creativity available “in the commons”. These licenses are not an alternative to copyright. Instead they apply on top of copyright, clarifying which rights are extended to others and which rights are retained by the authors, under their copyrights.

The Creative Commons provides detailed guidelines for annotating text, images, audio, and video, to clearly specify how content is licensed, with a small common set of relatively easy to understand licenses. They also provide guidelines for publishing via file sharing and social networking sites. Some support is provided for embedding license information as meta-data within digital files. The architecture presented in this paper makes extensive use of the electronic embedding of license information in files.

It is important to understand a few other things about Creative Commons. Firstly content licensed under Creative Commons licenses is not changeable or revocable. That is, once someone has received a copy of some CC-licensed content, the work is perpetually licensed under the license it was received under. Secondly, view is always permissible under CC. In other words, no CC license prevents someone from viewing, reading, or listening to the CC-licensed content. Secondly, non-exclusive CC licenses are possible. This means, for example, that a particular piece of content may be licensed to the general public in a way that is relatively restrictive, but if someone wanted a less restrictive license, they could negotiate with the copyright holder for a different license.

1.2.2 License Types

Seven main license types are defined by Creative Commons:

1. *Public Domain:*

This license doesn't put any restrictions on how others may remix, tweak, or build upon your work.

2. *Attribution:*

This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of the licenses offered. It is recommended for maximum dissemination and use of licensed materials.

3. *Attribution, Share-Alike:*

This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This license is often compared to free and open source software licenses. All new works based on yours will carry the same license, so any derivatives will also allow commercial use.

4. *Attribution, No-Derivatives:*

This license allows for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to you.

5. *Attribution, Non-Commercial:*

This license lets others remix, tweak, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms.

Chapter 1. Introduction

6. *Attribution, Non-Commercial, Share-Alike:*

This license lets others remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.

7. *Attribution, Non-Commercial, No-Derivatives:*

This license is the most restrictive of the licenses, only allowing others to download your works and share them with others as long as they credit you, but they can't change them in any way or use them commercially.

All of the six non-Public Domain licenses can be made non-exclusive with “CC+”[citation needed]. This provides an explicit mechanism by which a CC-licensed work can be marked up to express that different custom license terms can be negotiated and how the author might be contacted to start such negotiation.

1.2.3 Creative Commons Rights Expression Language

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1.3 Creative Commons on the Internet Today

1.4 Usage Management

1.5 Related Work

1.6 Approach

Chapter 2

Implementation

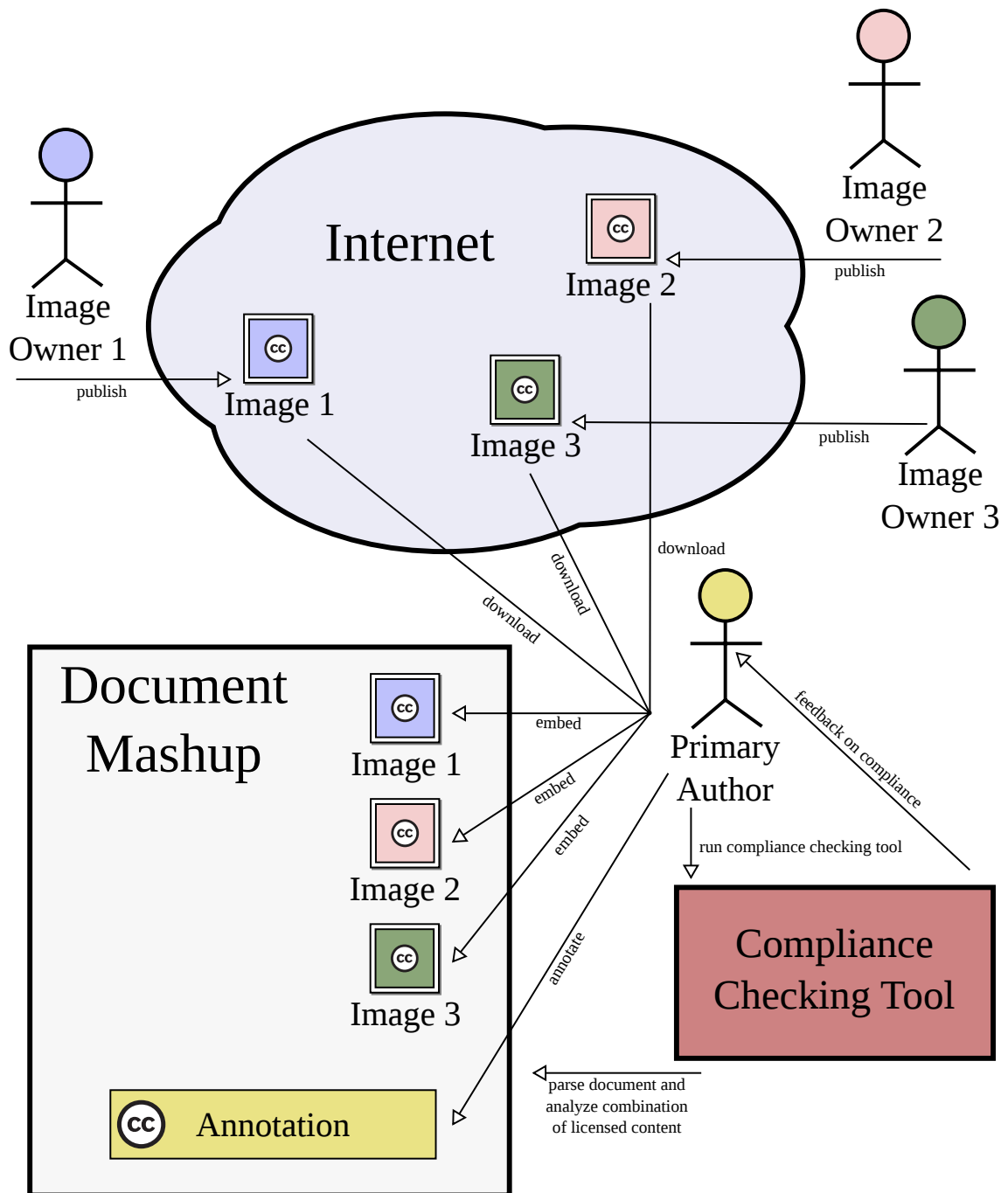


Figure 2.1: Use case 1.

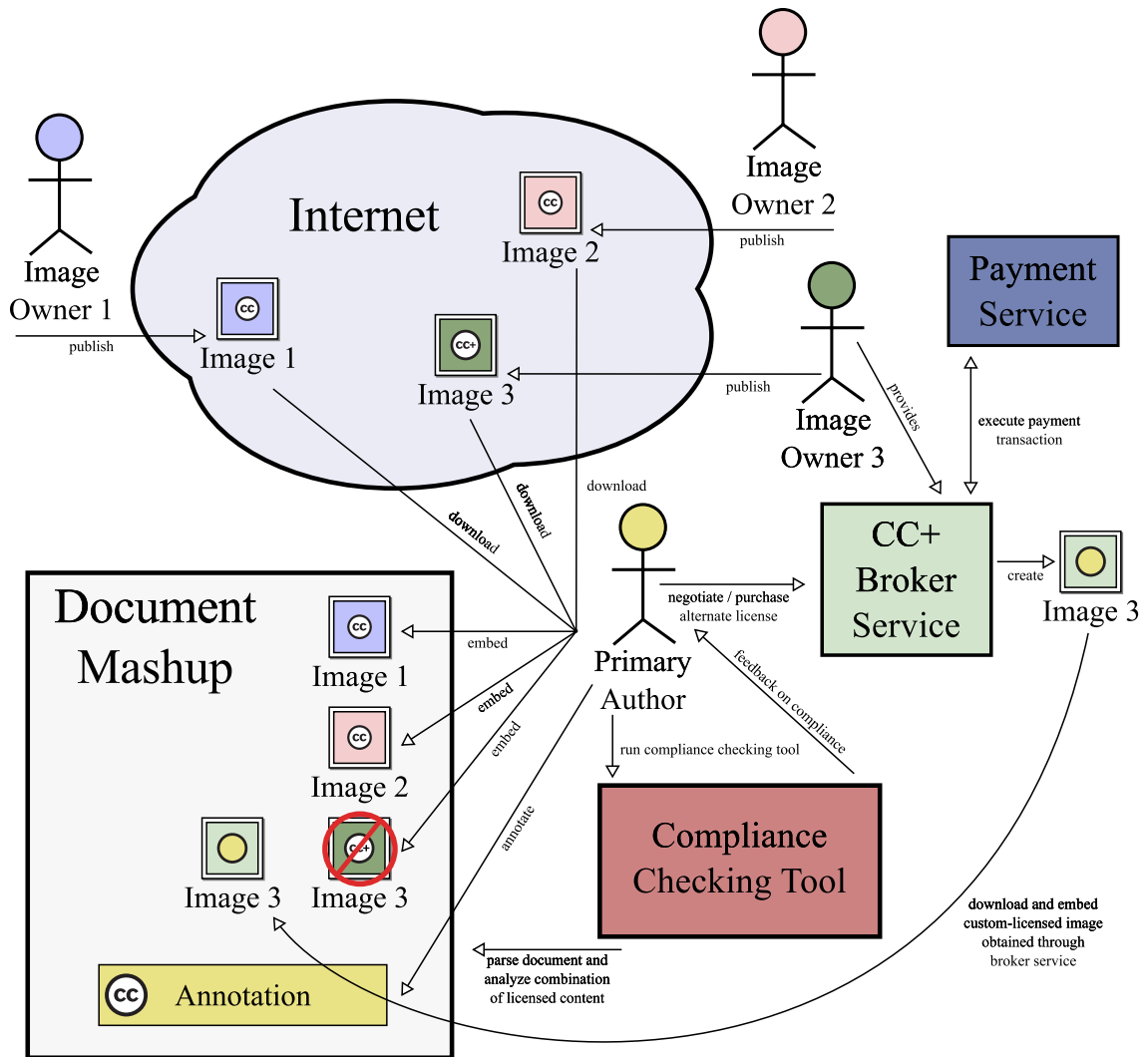


Figure 2.2: Use case 2.

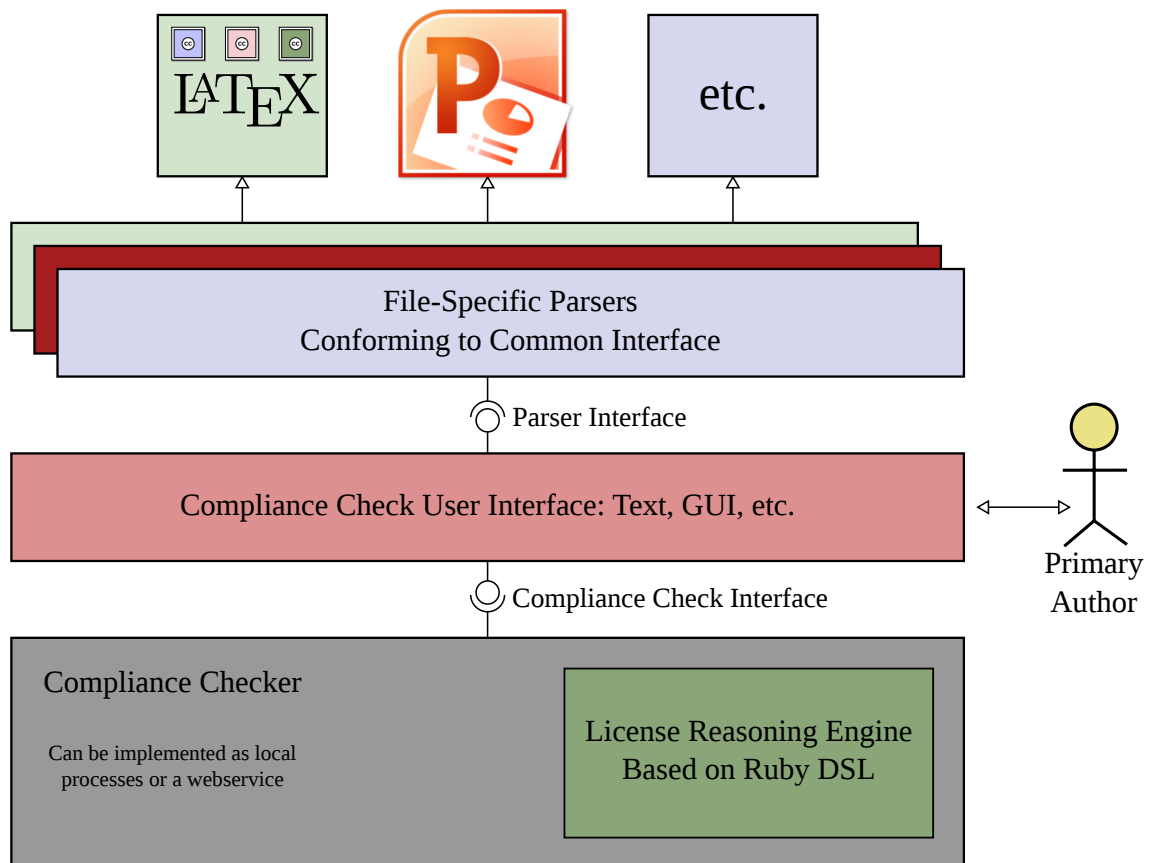


Figure 2.3: Compliance Checking Tool



Figure 2.4: License Reasoning Engine



Figure 2.5: CC+ Broker Service

Chapter 3

Conclusions

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Chapter 3. Conclusions

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Chapter 4

Future Work

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