Master Thesis

COPYRIGHT PROTECTION OF IPTV CONTENT

Christin Naenak
234161
Master Program in Law and Technology
Tilburg University

Supervised by:
S.L. Gellaerts
M.H.M. Schellekens

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List of Abbreviations

CAS	Conditional Access System
CDPA	Copyright, Designs and Patent Act 1988
CPS	Content Protection System
DEA	Digital Economy Act 2010
DRM	Digital Rights Management
IIPA	International Intellectual Property Alliance
IP	Internet Protocol
IPTV	Internet Protocol Television
ISP	Internet Service Provider
P2P	Peer to Peer
TPM	Technological Protection Measure
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UGC	User Generated Content
UK	United Kingdom
US	United States of America
USTR	United States Trade Representative
VOD	Video on Demand
WCT	WIPO Copyright Treaty
WPPT	WIPO Performances and Phonograms Treaty

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Chapter 1: Introduction

1.1. Background

The internet is one of most influential, rapidly-developing technologies of the past decade, one which has become a major source of information, education, and entertainment. Especially in an archipelago country like Indonesia, where more than 206 million people are scattered over many islands, the Internet becomes crucial for connecting these millions of people and speedily providing information.[1] Although Indonesia is a developing country without advanced internet access, the Internet has become an important part of current Indonesian life. According to World Bank research, internet users in Indonesia have increased from 13 million users in 2007 to 18 million users in 2008.[2] This progress should be viewed as an opportunity for the broadcasting industry to introduce new forms of service, such as Internet Protocol Television (IPTV) service, in Indonesia.

Traditionally, the broadcasting industry relied on a terrestrial mode, cable, or satellite television to deliver content, but broadcasting now also takes advantage of internet networks to transmit content.[3] This method is known as IPTV, which allows content to be distributed over internet protocol (IP).[4] Defining IPTV is a challenge because many forms of IP content distribution share similar features. In addition, the legal definition of IPTV is different depending on the regulatory framework. Nonetheless, IPTV could simply be defined as digital television delivered over IP.[5]

IPTV offers special features, such as interactivity, which are not available in traditional methods of broadcasting and are therefore appealing to customers.[6] Other unique IPTV

[1] This statistic was available in 2000 and has surely increased significantly since. See Indonesian Statistic Centre Bureau, http://www.bps.go.id/tab_sub/view.php?tabel=1&daftar=1&id_subyek=12&notab=1, accessed on August 16, 2010.
[2] World Bank, "Internet User," http://data.worldbank.org/indicator/IT.NET.USER, accessed on August 16, 2010.
[3] Terrestrial mode is a mode of television broadcasting which does not involve satellite or cable, but instead uses radio waves.
[4] Paul Ganley, "Copyright and IPTV," http://ssrn.com/abstract=939556, accessed on November 24, 2009.
[5] OECD (2007), "IPTV: Market Developments and Regulatory Treatment", *OECD Digital Economy Papers*, No. 137, OECD Publishing, http://www.oecd-ilibrary.org/oecd/content/workingpaper/230651165186, accessed on January 6, 2010.
[6] See OECD (2007), "IPTV: IPTV: Market Developments and Regulatory Treatment."

features include: a) large video libraries of premium content available on-demand, b) virtual channels that let users pause and rewind live TV, and c) accurate reporting on how and when content is being consumed.[7] In spite of these special features, according to Jeff Heynen, directing analyst for broadband and IPTV at Infonetics Research, most of IPTV content is currently very similar to content in cable or satellite network.[8]

Since IPTV operators do not create their own content, they must purchase content from a content provider before delivering it to subscribers over the Internet. However, protecting copyrighted, internet-broadcast content can be a challenge over the Internet, and can result in financial loss for copyright owners.[9] Bhattacharjee, Gopal, and Sanders mention that the development of compression technology and internet bandwidth will present a major challenge to the movie industry, just as music piracy did to the music industry; other digital industries, like IPTV, will soon have to face similar copyright issues.[10] As a result, content providers may demand that IPTV operators apply high-security measures to protect premium content from unauthorized use. Unfortunately, technological measures cannot guarantee perfect protection; copyright is a complex issue and requires a comprehensive solution rather than simply a technological one.

Lawrence Lessig's theory regarding modalities of regulation can be used to understand and to address copyright issues in the realm of IPTV. According to Lessig, there are four modalities of regulation which can be used to regulate behavior in cyberspace: the law, the market, norms, and code.[11] Each of these four areas of regulation can be applied to overcome copyright issues of IPTV content; however, this thesis will focus mainly on copyright protection through law.

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[7] See Paul Ganley, "Copyright and IPTV."

[8] Before IPTV provider offers these attractive features, they need to provide basic content such as television programs. This will allow IPTV operators to compete with cable and satellite operators. See David Cotriss, "IPTV New Content Roadmap," http://www.dailyiptv.com/news/iptv-new-content-roadmap-040907/, accessed on June 24, 2010.

[9] A study from International Federation of the Phonographic Industry shows that digital piracy is the major barrier for legitimate digital music and causes tremendous damage to the local music industry. For example, in Spain, which is home to one of the highest illegal file shares in Europe, the legitimate music market is currently one-third of its 2001 size. See IFPI, "IFPI Digital Music Report 2010," http://www.ifpi.org/content/library/DMR2010.pdf, accessed on January 9, 2011.

[10] Sudip Bhattacharjee, Ram D. Gopal, and G. L. Sanders, "Digital Music and Online Sharing: Software Piracy 2.0?" http://ssrn.com/abstract=527342, accessed on January 8, 2011.

[11] L. Lessig, "The Laws of Cyberspace Draft 3," This essay was presented at the Taiwan Net '98 conference, in Taipei, March, 1998, http://cyber.law.harvard.edu/works/lessig/laws_cyberspace.pdf.

IPTV is a relatively new service in Indonesia, but this service will soon be expanding. In 2008, the members of TELKOM (the largest telecommunication and network services provider in Indonesia), Indonusa Telemedia, and PCCW International (HK) Limited (a Hong-Kong-based company) signed a Memorandum of Understanding on ways to provide world-class IPTV service in Indonesia.[12] In addition, on August 19, 2009 the Department of Communication and Information released the Regulation of Minister of Communication and Information No. 30/PER/M.KOMINFO/8/2009 regarding the operation of IPTV service in Indonesia, and shortly thereafter the first trial of TELKOM IPTV service was held in the office of the Department of Communication and Information.[13] Since IPTV in Indonesia is still in its early stages, it is important that Indonesia learn from other countries which already provide IPTV service. IPTV has operated in the United Kingdom (U.K.) for about ten years and the industry has developed more advanced methods of regulation. Therefore, in addition to the Lessig's theory, this thesis also discusses the application of U.K. copyright law in the area of IPTV copyright issues.

1.2. Research Question

This thesis is intended to answer the following questions: How does Indonesian copyright law work to overcome IPTV service copyright threats in Indonesia, and is the law adequate to protect IPTV content?

In order to answer the main problem, these sub-questions will also be discussed:

1. What is the definition of IPTV?
2. What are the principal copyright issues related to IPTV content?

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[12] PT. Telekomunikasi Indonesia, Tbk. ("TELKOM"") is the largest telecommunication and network services provider in Indonesia and the majority of the stock is owned by Indonesian government.
TELKOM, "Press Release-Kerjasama TELKOM, INDONUSA and PCCW dalam Penyediaan Layanan World-Class IPTV di Indonesia,"
http://www.telkom.co.id/download/File/UHI/Releaseindo/PressReleaseTELKOMIndonusa_IPTVbersih.pdf, accessed on August 16, 2010.

[13] This regulation has been amended in the Regulation of Minister of Communication and Information No. 11/PER/M.KOMINFO/07/2010, dated July 30, 2010.
The first trial took place on September 8, 2009. See TELKOM, "Telkom Make Trial on IPTV Service at Depkominfo," http://www.telkom.co.id/media-corner/press-release/telkom-make-trial-on-iptv-service-at-depkominfo.html?lid=en, accessed on August 16, 2010.

3. How can Lessig's theory about modalities of regulation be applied to overcome copyright threats?
4. How do Indonesian and U.K. copyright laws handle copyright threats?

1.3. Purpose

IPTV is still new in Indonesia and has not yet begun full operation. Nonetheless, copyright infringement is a massive problem for other internet services in Indonesia, since illegal downloading of copyrighted content can easily be done.[14] This history of infringement may hinder the development of Indonesian IPTV. Therefore, this thesis is intended to analyze how to overcome IPTV-service copyright threats in Indonesia. In answering the research question, this thesis will apply Lessig's theory of modalities of regulation and will discuss each of the four constraints, each of which can play an important role in limiting copyright violations. However, the thesis will devote most of its attention to law and will aim to conclude whether or not Indonesian law is adequate to protect IPTV content. To do so, this thesis will also discuss U.K. copyright law, since the U.K. has years of experience in protecting IPTV content. Discussions of U.K. copyright law will be useful for Indonesian regulators, as this analysis can be used as input for the Indonesian regulator in amending current Indonesian copyright law. If Indonesian law cannot perfectly address IPTV copyright issues, then other constraints in Lessig's theory should be taken into consideration. Though this thesis focuses on copyright protection through law, other constraints must remain an important part of copyright protection of IPTV content.

1.4. Methodology

In order to answer the above research questions, this thesis will be based on literature research. Paul Ganley's paper, "Copyright and IPTV," and Gerard O'Driscoll's *Next Generations IPTV Services and Technologies* will be used as central sources for this thesis. In addition, this thesis will look at Indonesian law such as Law No. 19 year 2002 regarding copyright, the Regulation of Minister of Communication and Information No. 11/PER/M.KOMINFO/07/2010 regarding operation of IPTV service in Indonesia, and other

[14] Indonesian law enforcement will be discussed further in Chapter 4.

related regulations. In looking at U.K. law, this thesis will primarily examine the Copyright, Designs and Patent Act of 1988 and the Digital Economy Act of 2010.

1.5. Structure

This thesis will be structured as follows:

1. The first chapter introduces background, research questions, and methods.
2. The second chapter describes the development of the broadcasting industry, culminating in the creation of IPTV. This chapter will also discuss the definition and features of IPTV. In addition, this chapter will discuss copyright threats to IPTV service.
3. The third chapter will discuss Lessig's theory of modalities of regulation, which can be applied to address IPTV-service copyright infringement. Copyright protection through the four constraints of the law, the market, social norms, and code will be explained in this chapter.
4. The fourth chapter will look more closely at the law as a mode of regulating copyright threats and will explain how Indonesian law can overcome IPTV copyright threats. This chapter will also examine the U.K. legal perspective and the ways U.K. copyright law overcomes copyright threats. Finally, this chapter will compare Indonesian copyright law and U.K. copyright law.
5. The fifth chapter will offer a conclusion and answer the research questions.

Chapter 2: IPTV and Copyright

2.1. Television Broadcasting Development

To communicate is part of human nature, and to facilitate that need, communication technology was invented and developed over time. One of these communication technologies is television, the electrical transmission and reception of temporary visual image.[15] Television's advantage as a communication tool is its rapid and mass broadcasting abilities.[16] Since its introduction to the public in the 1950s, television has developed in physical appearance (as formatted in peripheral equipment) as well as in its transmission modes.

In order to broadcast television content, broadcasting technology and communication technology have developed in tandem. In fact, in this era of digitalization, the boundary between conventional broadcasting technology and communication technology grows less clear. Some scholars argue that the media, telecommunication, and information technology industries have merged into one multimedia industry.[17] Traditionally, broadcasting services was transmitted via cable, satellite and terrestrial networks; today, it can be transmitted via these means and through IP networks and mobile platforms.[18]

An important part of traditional development of broadcasting, cable television was commercially available to the public beginning in the early 1950s.[19] This mode of broadcasting relies on stringing wires, which usually requires access to telephone and electricity poles.[20] At its start, cable television faced the problem of accessing a network connection in a local area; therefore, television companies piggybacked on pre-existing networks.[21] Since then, cable television has become the pioneer of the local-network

[15] Albert Abramson, *Television - An International History*, ed. Anthony Smith. (Oxford University Press, 1998), 9.
[16] Ibid.
[17] Sylvia M. Chan-Olmsted and Jae-Won Kang, "Theorizing the Strategic Architecture of a Broadband Television Industry," http://pdfserve.informaworld.com/118740_751305279_785346966.pdf, accessed on June 5, 2010.
[18] Natalie Helberger, "Controlling Access to Content-Regulating Conditional Access in Digital Broadcasting," (Phd diss., Universiteit van Amsterdam, 2005), 6.
[19] Randal C. Picker, "Who Should Regulate Entry into IPTV and Municipal Wireless?" http://ssrn.com/abstractid=931495, accessed on November 20, 2009.
[20] Ibid.
[21] Ibid.

industry.[22] Later, pay TV and cable television emerged: HBO (Home Box Office) successfully launched the first pay TV service, which served local and national networks.[23] Although content distribution remained with local pay TV operators, this was the first step towards wide service broadcasting.

In addition to cable broadcasting, satellite broadcasting is one of the leading modes of broadcasting. Satellite broadcasting transmits signals by satellite or other space vehicle to points on the earth.[24] There are several features of satellite broadcastings: 1) commonality of information, 2) wide area of coverage, 3) disaster resistance, 4) uniform coverage over a large geographical area, and 5) good mobility.[25] In contrast to cable television, which is restricted by geographical boundaries, satellite television may serve as the ideal broadcasting mode to reach a broader area spanning national and international boundaries and to reach a wider viewership.

Terrestrial broadcasting was once the pioneer of modern broadcasting and it is still used today. In spite of the development of cable and satellite mode, terrestrial broadcasting is still useful because of the existence of political, geographic, and other boundaries.[26] Many countries cannot have cable and satellite coverage because the environment does not support these technologies. Countries with permafrost, for instance, or countries which are far from the equator such as Scandinavian countries, will likely have more problems with satellite reception.[27] Additionally, there are many countries which, for political reasons, do not allow uncontrolled access to television programs from outside the country.[28] Another practical reason to use this technology is to cover local television programs that are not broadcast via satellite or cable.[29]

IP networks are the latest development in the digitalized broadcasting world, and can be used as an effective broadcasting tool. Digitalization, which replaces the old analog system with a

[22] Ibid.
[23] Kenneth R. Carter, "Intellectual Property Concerns for Television Syndication Over the Internet," in Internet Television, ed. Eli Noam, Jo Groebel, and Darcy Ger (New Jersey: Lawrence Erlbaum Associates, 2004), 146.
[24] Tadashi Shiomi and Mitsuthosi Hatori, *Digital Broadcasting*, (Ohmsha, Ltd., Tokyo:1998), 159.
[25] Ibid., 160.
[26] W. Fischer, *Digital Video and Audio Broadcasting Technology-A Practical Engineering Guide*, (Springer, Heidelberg: 2004), 335.
[27] See W. Fischer, *Digital Video and Audio Broadcasting Technology-A Practical Engineering Guide*.
[28] Ibid.
[29] Ibid.

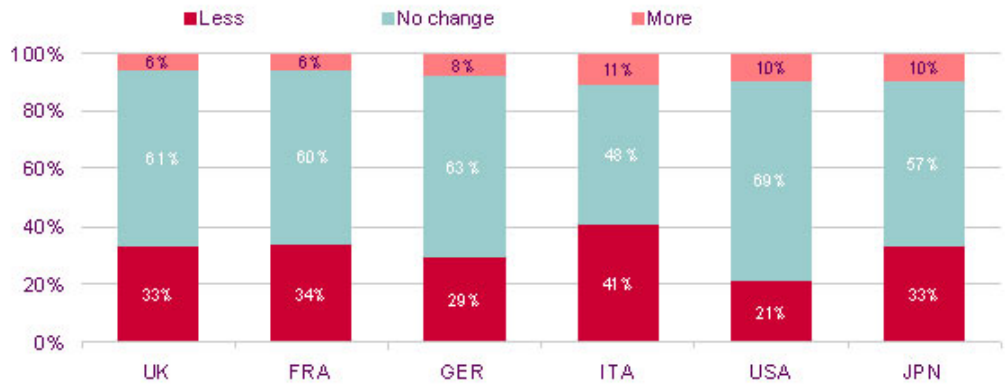
digital system, allows transmissions with more efficient use of bandwidth and also allows interactive services.[30] Infrastructure, originally designed for specific services, enables transmission of IP packages.[31] As a result, existing networks merge into a single horizontal layer, where the consumption of content is not limited to any one device.[32] IP enables content to be transmitted and received anytime, anyplace, and any way. Though IP broadcasting requires a high-speed distribution networking platform, internet broadcasting is a powerful opportunity for the broadcasting industry.[33] Broadcasting over IP is still in its early stages, but internet broadcasting looks to be an important competitor to traditional broadcasting.

2.2. IPTV

The impact of the Internet on modern society is enormous, and this phenomenon has lead to a change in conventional television viewing. In fact, the Internet may reduce television viewing, especially for those who have grown up in the era of the personal computer. In 2006 Ofcom research revealed that many internet users have changed their television-viewing habits since their first use of the Internet.[34] The change in television viewing can be seen in Figure 1.

[30] OECD (2007), "Policy Consideration for Audio-Visual Content Distribution in a Multiplatform Environment", http://www.itu.int/osg/csd/wtpf/wtpf2009/resources/OECD%20convergence%20policy%20AV%20Content.pdf, accessed on March 4, 2010.
[31] Ibid.
[32] Ibid.
[33] Gerard O'Driscoll, *Next Generations IPTV Services and Technologies*, (Jon Wiley & Sons, New Jersey: 2008), 20.
[34] Stan J. Liebowitz and Alejandro Zentner, Clash of the Titans: Does Internet Use Reduce Television Viewing?, http://ssrn.com/abstract=1440920, accessed on June 2, 2010.
Ofcom or Office of Communications is an independent organization which regulates the U.K.'s broadcasting, telecommunications and wireless communications sectors. For more information, see the Ofcom website at http://www.ofcom.org.uk/consumeradvice/guide/#aboutus.

Figure 1: Changes in offline TV viewing since first using the Internet.[35]



(% adults with broadband at home)

The migration from television to the Internet as a principal source of information should suggest to television executives the importance of adjusting to these changes and of developing the Internet as a means of broadcasting. IPTV provides an alternative to traditional broadcasting and can offer much the same content as conventional television, along with additional special features not available in traditional broadcasting. These elements will add value for the television viewer and create greater opportunities for the broadcasting industry in the realm of IPTV service.

2.2.1. Definitions of IPTV

IPTV can be best defined as digital television delivered over IP. Internet Protocol Television (also called IPTV, Telco TV, or broadband TV) securely delivers high quality broadcast television and/or on-demand video and audio content over a broadband network.[36] ITU's Recommendation ITU-T Y.1901 lays out one official set of requirements for IPTV services support.[37] According to this Recommendation, IPTV is defined as multimedia services such as television, video, audio, text, graphics, and data delivered over IP-based networks that manage to support the required level of QoS/QoE, security, interactivity, and reliability.[38]

[35] Ofcom, "The International Communications Market 2006: 1 Overview," http://www.ofcom.org.uk/research/cm/icmr06/overview/overview.pdf, accessed on June 17, 2010.
[36] See Gerard O'Driscoll, *Generations IPTV Services and Technologies.*
[37] ITU or International Telecommunication Union is United Nations agency for information and communication technology issues. For more information see ITU website at http://www.itu.int.
[38] QoS refers to quality of service and QoE refers to quality of experience. More about the Recommendation ITU-T Y.1901 could be seen at: http://www.itu.int/itu-t/recommendations/rec.aspx?id=9581.

Other services, such as webcasting and internet TV, are similar to IPTV. Webcasting can be defined as delivery content via the Internet, but differ from IPTV in several respects.[39] First, webcasting viewers access the service from a television set rather than a personal computer.[40] Second, the business models of these services differ: IPTV operates on a subscription basis, while webcasting services are usually provided for free.[41]

Although IPTV and internet TV both have similar names and rely on similar technology, it is important to distinguish these two services, as this thesis will describe IPTV only, not audio-visual services over the internet in general. The copyright issues discussed herein will focus on IPTV content, not on all content available over the Internet. The principal differences between IPTV and internet TV are the following:[42]

1. Different platform:
   IPTV uses secure, dedicated private networks to deliver content to consumers, while internet TV uses public internet to deliver video content to end users.

2. Geographical reach:
   IPTV works in limited networks with fixed geographical areas provided and controlled by the telecom operators, and cannot be accessed by non-IPTV subscribers. Meanwhile, internet TV can be accessed everywhere that has internet connection. This is possible because the Internet blurs national and international boundaries: a proxy server on a middle-of-nowhere island has the capacity to webcast content anywhere.[43]

3. Ownership of the networking infrastructure:
   IPTV is delivered over a networking infrastructure usually owned by a service provider, which allows telecom operators to engineer the system to deliver high-quality video. In contrast, internet TV relies on public internet to carry the video, which can cause video

[39] Isik Onay, "Regulating Webcasting: An Analysis of the Audiovisual Media Services Directive and the Current Broadcasting Law in the UK," doi:10.1016/j.clsr.2009.03.003 , accessed on February 6, 2010.
[40] Ibid.
[41] Ibid.
[42] See Gerard O'Driscoll, *Generations IPTV Services and Technologies.*
[43] See OECD (2007), "Policy Consideration for Audio-Visual Content Distribution in a Multiplatform Environment".

streaming to be slow and the resolution of picture to be quite low. Therefore, compared to traditional television, the quality of video over internet TV cannot be guaranteed.

4. Access mechanism:
   To access IPTV, generally the end user must be an IPTV subscriber and needs to have a digital set-top box. Meanwhile, internet TV consumers need only to have a PC and to download software used on a PC, depending on the type of internet TV content. For example, downloading-to-own content from an internet TV portal site sometimes requires the installation of dedicated media player to view the material.

5. Cost:
   IPTV consumers need to pay subscription fees, while much of internet TV content is available free of charge. However, nowadays several internet TV providers have begun to introduce fee-based internet TV services.

2.2.2. IPTV features

As mentioned, IPTV, webcasting, and internet TV are different services. IPTV has significant features which cannot be found in webcasting or internet TV. These features can be described as follows:[44]

1. Support for interactive TV:
   IPTV is supported by systems that allow service providers to deliver interactive applications, such as interactive games, television content, and high-speed internet browsing.

2. Time shifting:
   IPTV has mechanisms for recording and storing IPTV content for later viewing.

3. Personalization:

[44] See Gerard O'Driscoll, *Generations IPTV Services and Technologies.*

IPTV customers are allowed to personalize their television viewing habits, deciding which content to watch and when to watch it. Such personalization is available in IPTV because IPTV provide both pushed and pulled content.[45]

4. Low bandwidth requirements:
   Service providers do not need to deliver every channel to every consumer, because IPTV technologies enable consumers to stream only the requested channel. Therefore, IPTV does not require high bandwidth.

5. Accessible on multiple devices:
   IPTV consumers could view IPTV content through many devices (not only PCs, but also mobile devices).

2.2.3. IPTV content

IPTV content comes in many varieties and from many sources. The IPTV operator is not automatically the content provider; therefore, copyright owners of IPTV content vary widely, depending on the types of content and where IPTV operators acquire content.

There are three types of IPTV services: basic channel service or traditional television program; video on demand (VoD) service; and interactive data service.[46] As mentioned in Chapter 1, IPTV content currently overlaps heavily with cable or satellite network content. In order to broadcast television content, IPTV operators must purchase it from content providers ranging from major broadcasting networks such as CNN and FOX, to Hollywood studios such as Disney, to independent web video and animation producers.[47] If the content is obtained from a content provider, an IPTV operator must obtain a license from the content owner before broadcasting content. Besides licensing, an IPTV operator could lawfully obtain the copyright of the content by entering a transfer-of-copyright agreement. If the

[45] Pulled content is accessed when costumers make an effort to reach the content through accessing or downloading. Meanwhile, pushed content is content that is delivered in the absence of a request by users. See Isik Onay, "Regulating Webcasting: An Analysis of the Audiovisual Media Services Directive and the Current Broadcasting Law in the UK."
[46] ITU, "Classifications of IPTV Service and Its Meaning," www.itu.int/ITU-T/IPTV/events/072006/docs/ID/FGIPTV-ID-0026e.doc, accessed on June 23, 2010.
[47] Jeffrey Hart, "Content Models: Will IPTV Be More of the Same or Different?" in Internet Television, ed. Eli Noam, Jo Groebel, and Darcy Ger (New Jersey: Lawrence Erlbaum Associates, 2004), 208-214.

copyright of the content is fully transferred without any rights retained, an IPTV operator can do anything with the content.

IPTV may also use interactivity features to create its own unique IPTV content. For example, a series from HBO entitled "The Deadwood Mysteries" used interactivity features to contribute to the plot of a sixteen-episode series about a girl who mysteriously disappears.[48] This series allowed viewers to send their thoughts about plot of the story via email, enabling the audience to participate and become part of the investigation.[49] However, this type of service raises questions about the copyright owner of the content. The producer of the series and interacting fans create the plot jointly: who is the owner?

VoD is another attractive IPTV feature, one which allows viewers to watch content at anytime.[50] VoD service allows viewers to access a multitude of films, but the customer first needs to obtain a password.[51] An IPTV subscriber reaps many benefits from the later-viewing feature of this service. However, the service can pose copyright threats; allowing viewers to download content over the Internet is always a risk, even when IPTV operators have applied technological measures to protect content.

A relatively new type of IPTV content is user-created content or user-generated content (UGC), although UGC existed far before IPTV became commercially available. UGC can be defined as content available on the Internet as a result of the creative efforts of non-professional creators.[52] In practice, UGC comes in many formats, including text, photo, music, video, educational content, mobile content and virtual content.[53] Since UGC is created by an end user rather than by a content provider, it was previously available principally for

[48] Gali Einav, "The Content Landscape," in Internet Television, ed. Eli Noam, Jo Groebel, and Darcy Ger (New Jersey: Lawrence Erlbaum Associates, 2004), 227-228.
[49] Ibid.
[50] See Isik Onay, "Regulating Webcasting: An Analysis of the Audiovisual Media Services Directive and the Current Broadcasting Law in the UK."
[51] A password is one of the technological protections applied in VoD. A password will only work on a specific computer, preventing other computers from launching the movie file. Another example is a time-limited restriction. A viewer can access a rented movie with a time limit and needs to renew the authorization code once it has expired. See Kevin Zhu, "Internet-based Distribution of Digital Videos: The Impact on the Motion Picture Industry," http://ssrn.com/abstract=526582, accessed on June 26, 2010.
[52]OECD website, Directorate for Science, Technology and Industry Committee for Information, Computer and Communication Policy, "Participative Web: User-created Content," http://www.oecd.org/dataoecd/57/14/38393115.pdf, accessed on June 26, 2010.
[53] Ibid.

non-commercial use; however, now UGC comes in commercial forms as well. The shift from non-commercial to commercial forms of UGC could lead to the question: who owns the copyright of UGC? IPTV operators should ensure copyright protection before they broadcast user-generated content; some creators may not allow their work to be commercialized, while others may have no objection.

IPTV operators must know who owns copyright-protected content and must obtain the right to broadcast it before they offer content to customers. However, because copyright law is broad and enacted differently in different countries, the operator must understand different copyright policies applied to different types of content. This is especially true when a new paradigm of copyright, such as creative commons, is introduced to the world of intellectual property. Creative commons is a form of copyright license that, in principle, changes the "all rights reserved" approach into "some rights reserved".[54] The aim of creative commons is to balance excessive copyright protection, on the one hand, with illegal exploitation of copyright, on the other.[55] Creative commons licenses come in many varieties, but in general the license permits others to use original work without advance permission, as long as the derivative work is followed by acknowledgment of the copyright owner's directions.[56] Since creative commons constitute a major part of today's copyright development, IPTV operators need to know whether content is under creative commons license or not; if so, IPTV operators must know the type of license applied to that content. If the content is under creative commons license allowing for commercial use, then IPTV operators can use the content and offer it to their subscribers.

[54] Michael W. Carroll, "Creative Commons as Conversational Copyright," http://ssrn.com/abstract=978813, accessed on June 27. 2010.
[55] Andrew Sparrow, *Film and Television Distribution and the Internet*, (Hampshire: Gower Publishing Limited, 2007), 56.
[56] On its website, Creative Commons mentions six types of creative commons licenses: 1) Attribution Non-commercial No Derivatives, 2) Attribution Non-commercial Share Alike, 3) Attribution Non-commercial, 4) Attribution No Derivatives, 5) Attribution Share Alike, and 6) Attribution. See Creative Commons Licenses, http://creativecommons.org/about/licenses/meet-the-licenses.
Michael W. Carroll, "Creative Commons and the New Intermediaries," http://ssrn.com/abstract=782405, accessed on June 27. 2010.

2.3. Copyright Issues in IPTV

Copyright issues affect any transmission of material over the Internet, and therefore affect IPTV service as well. When a video or a song is broadcast over the Internet, unauthorized copies can easily be created and shared instantaneously. However, illegal copies are not the only IPTV-related copyright issues; others occur due to unique IPTV features.

2.3.1. Copyright holders of IPTV content

As mentioned above, copyright holders of IPTV content fall under several types. IPTV operators can hold content copyright, or IPTV operators can obtain licenses to broadcast the content while the content provider holds copyright. In such cases, there is no question of who owns the copyright. However, as mentioned previously, IPTV's unique features enable interactivity and the creation of interactive content, like, series in which the storyline is created by both the producer (or any party which is represent the original copyright owner of such series) and participating viewers. This situation can raise several copyright questions. Can a suggestion or an opinion about the storyline be protected by copyright law? If the producer includes viewer suggestions in the storyline, do participating viewers have any rights to the series? What can the IPTV operator do to ensure that all content, including interactive content, is broadcast without infringing copyright?

A second IPTV content issue relates to UGC. Many of the amateur creators of UGC use copyrighted content (such as music or video footage) without permission from copyright owners, resulting in copyright infringement.[57] Therefore, two important questions arise about UGC: 1) does the content infringe copyright and 2) who owns the content? Without a clear answer to these two questions, IPTV operators should think twice before broadcasting UGC, or they might run into copyright issues.

[57] YouTube is one of the biggest web hosts which provide UGC. However, many YouTube end users create videos with illegal material. Therefore, while YouTube does not guarantee all the material is legal, the site provides a Copyright Infringement Notifications allowing copyright holders to take down videos. See http://www.youtube.com/t/copyright_notice, accessed on November 2, 2010.

2.3.2. Illegal copying and file sharing

IPTV service is sensitive to copyright issues because IPTV content is transmitted to subscribers through streaming and/or temporary downloading, which tends to make content more susceptible to copyright infringement. Streaming and downloading are two different processes, although both can be defined as methods of transferring data: streaming can be defined as transferring data processed in a steady and continuous stream, while downloading is transferring data from one computer to another.[58] Neither streaming nor downloading is free from technical weaknesses; infringers can break protection measures and unlawfully copy content.[59]

Theoretically, technical limitations can restrict access to IPTV content. If the content is available for temporary download, then the technical system will limit access and the subscriber cannot obtain a permanent copy of the content. The same applies to streaming content. However, learning from the digital music industry, which has dealt with numerous copyright threats, IPTV operators would be wise to be aware of copyright threats that could also attack content at any time.

Illegal copies of IPTV content can threaten IPTV business; however, the real damage to an IPTV service comes when an infringer starts to share content to non-subscribers through illegal file-sharing. When IPTV content, like illegal music, is available in peer-to-peer (P2P) networks, why should viewers bother to pay a subscription fee to watch the content? How can a paid subscription compete with an infringer who provides illegal copies for free?

When it comes to illegal copying and file-sharing, the question arises: who is liable for copyright infringement? This is a tricky issue because IPTV service involves several parties and interests. To run its business, an IPTV service involves at least three parties: the content

[58] Although some IPTV content is available by downloading the content, it is not available for permanent download. Downloading is limited by time or another scheme such as number of views. For example, in September 2006 the BBC announced its iPlayer that has "catch-up" and "series stacking" features. The catch-up feature allows users to download programs that they missed, while series stacking allows users to download all episodes in a series while it is still being broadcasted. In order to operate catch-up television, the user simply needs to install Windows Media Player and connected to the internet with a U.K. based IP address. See Paul Ganley, "Copyright and IPTV."

[59] Even if the content is available for streaming and not available for downloading, in reality, streaming could end up saving or copying the file because there is various software that enable user to save streaming content.

provider or other copyright owner, the subscriber or end user, and the Internet Service Provider (ISP). Each has different rights and obligations, as well as different liabilities in relation to copyright infringement. Therefore, it is important to understand the copyright-infringement liability of each party.

The experience of the music industry has made clear that it is costly for copyright owners to proceed against individual infringers. Other difficulties include jurisdiction issues and the difficulty of identifying the anonymous infringer, who could reside anywhere with internet connection. Due to the latter difficulty, copyright owners tend not to place liability directly on the infringer, but instead ask for liability from secondary parties such as ISP or file-sharing services.

Secondary liability is familiar in the United States of America (U.S.) copyright law and is often mentioned in famous copyright cases, such as Sony Betamax and Grokster. The concept of secondary liability continues to develop and falls into several categories: contributory liability, vicarious liability, and inducement liability. Contributory liability occurs when a third party with knowledge of infringing activity induces or contributes to the infringement committed by another party.[60] Meanwhile, vicarious liability occurs when a third party has the ability to control the infringer's activity and receives financial benefit from the infringement.[61] The most recent type of secondary infringement to emerge is inducement liability. The concept of inducement liability was first introduced in the Grokster case, where Grokster was sued for producing a P2P file-sharing program. Inducement liability occurs when a third party distributes *a device with the object of promoting its use to infringe copyright as shown by clear expression or other affirmative steps to foster infringement*.[62] Secondary liability first appeared in the context of U.S. copyright law and may not be precisely applicable in other countries such as Indonesia. However, similar rulings in Indonesian law will be discussed furthermore to address the liability of a third party.

The enforcement of copyright restrictions has been a general problem in Indonesia. Although Indonesia has a body of copyright law created in line with international convention, law

[60] Allen N. Dixon, "Liability of users and third parties for copyright infringements on the Internet: overview of international developments," in Peer-to-Peer File Sharing and Secondary Liability in Copyright Law, ed. Alain Strowel (Cheltenham: Edward Elgar Publishing Limited, 2009), 15-16.
[61] Ibid.
[62] Ibid.

enforcement has been a longstanding problem of Indonesian law. Since 1989, Indonesia has been on U.S. Trade Representative (USTR) watch lists and has not moved from the status of Priority Watch List or Watch List.[63] This situation not only damages foreign industry in places like the U.S., it also damages local industry in Indonesia, especially in the entertainment industry. According to the International Intellectual Property Alliance (IIPA), ninety-two percent of movies, eighty percent of music recordings and eighty-seven percent of business software sold in Indonesia are pirated; as a result, U.S. copyright holders suffer losses of more than US$ 200 million a year.[64] As for the Indonesian recording industry, the loss in 2002 had reached the number of US$ 1.8 billion, with ten pirated versions sold for each original recording.[65] Such conditions raise the question of whether Indonesian law and law enforcement sufficient to protect IPTV content in general. It is important to understand that Indonesia's struggles have as much to do with weak law enforcement as they have to do with specific legal issues in IPTV copyright violation.

2.4. The Importance of IPTV Content Copyright Protection

There are three main reasons why copyright protection of IPTV content is crucial for IPTV business. First, an IPTV operator is not automatically a content owner, so the operator must obtain a variety of attractive content from content providers. Without assurance from an IPTV operator that the content is secure enough to be broadcast through their service, content owners are reluctant to give their consent to distribute content. In the case of big content providers such as HBO or Disney, IPTV operators are not likely to give license to broadcast their content if an IPTV operator cannot guarantee copyright protection of the content, even though the internet could be a powerful broadcasting medium.

Second, if an IPTV security system is not adequate, the content can be accessed without any fee from the non-subscriber. If that is the case, and on the other hand the subscriber has to pay a monthly subscription fee, an IPTV operator is more likely to lose its loyal customers.

[63] The USTR argued that Indonesia had no adequate protection and law enforcement to combat copyright infringement; therefore, Indonesia is still on the priority list with other ten countries, such as China, India and Thailand. The Jakarta Post, "RI strives to get off US copyright watch list," http://www.thejakartapost.com/news/2010/06/25/ri-strives-get-us-copyright-watch-list.html, accessed on August 12, 2010.
[64] Simon Butt and Tim Lindsey, "TRIPs, Intellectual Property Law Reform in Indonesia: Why Injunctions aren't Stopping Piracy," http://ssrn.com/abstract=1400527, accessed on August 10, 2010.
[65] Ibid.

Content loses value if the content's copyright is infringed. Content is valuable because it is protected by copyright, and people who want to access the content should pay for it.

Third, if and when IPTV service is offered in Indonesia, then IPTV operators will have additional copyright issues because of weak law enforcement. IPTV providers must understand how Indonesian law works and how it is enforced. If Indonesian law cannot provide sufficient protection, then IPTV operators must discover other ways to protect copyright.

Chapter 3: Application of Lessig's Theory to Copyright Protection of IPTV Content in Indonesia

3.1. Introduction to the Theory of Four Modalities of Regulation

Society needs regulation to create order among individuals and to protect their lawful rights. However, it takes more than law to regulate behavior, especially in cyber space, which is characterized by borderless space and anonymity. An authority cannot depend solely on law in order to regulate behavior in cyber world. Lawrence Lessig has introduced the theory of the four modalities of regulation, explaining that behavior in real space as well as in cyberspace is regulated by four constraints: the law, social norms, markets, and code architecture.[66] These four modalities do not work independently; rather, they interact in order to create a system of regulation.[67]

Law is the constraint with the largest influence on the other constraints. There are several reasons why law is still the best tool of regulation. First, law has the power to impose punishment if it is not obeyed; law is enforced by an authority.[68] Second, the law can powerfully regulate other constraints.[69] For example, in Indonesia the price of electricity is regulated by law; therefore, electricity suppliers cannot set the electricity price solely according to the market situation. Regardless, such a policy results in major losses to a national electricity company.[70] However, law cannot regulate effectively in every case. Law may serve as the ultimate source of regulation, but it cannot work alone; other constraints are still needed as a source of regulation.

Law is certainly needed to regulate behavior that takes place in cyber space, such as copyright infringement, defamation, and child pornography (although those misdemeanors

[66] Lawrence Lessig, "The Law of the Horse: What Cyberlaw Might Teach, http://www.lessig.org/content/articles/works/finalhls.pdf, accessed on August 11, 2010.
[67] Ibid.
[68] This does not necessarily mean that no alternatives are available to oppose valid regulation. Judicial review is available in many countries, including Indonesia. Since the date of the law's enactment, legal authority can impose punishment in the name of law enforcement.
[69] Lawrence Lessig, "The Laws of Cyberspace," http://www.lessig.org/content/articles/works/laws_cyberspace.pdf, accessed on August 11, 2010.
[70] The Jakarta Post, "The uproar over electricity," http://www.thejakartapost.com/news/2010/07/19/editorial-the-uproar-over-electricity.html, accessed on August 20, 2010.

are possible offline as well). In the case of copyright infringement for digital content, cyberspace is changing into a pirate's space. Creative industries such as the music industry have had to face great losses since the emergence of mass digital piracy on the Internet. These losses triggered creative industries to push the government to impose stricter laws regulating copyright infringement.[71]

The second constraint is social norms, which can be defined as standards of appropriate behavior as expected by a particular community, the sanctions of which will be enforced within that community through shame, exclusion or force.[72] Just like law, norms enforce punishment *ex post facto*, but the enforcer is society, rather than a legal authority.[73] Therefore, social norms are mostly dependent upon local values and vary from one community to another, even within the same country.[74] Netizens (cyber citizens) also have their own norms, which are enforced through soft action; for instance, a participant who talks too much in a discussion may be regulated by a common "bozo" filter (a feature that enables users to block unwanted messages from specific individuals).[75]

The third constraint is the market, which regulates by price.[76] This constraint directly regulates human behavior through economic factors: for instance, the price of gasoline limits the amount one drives.[77] However, without a comprehensive analysis of the economic condition of a particular country, the use of the market to regulate behavior can be ineffective. For example, Indonesia is an over-populated and impoverished country while original software like Microsoft Office, necessary for computer operation, is too expensive for many Indonesians.[78] As a result, most Indonesians buy a pirated version whose price is

[71] The Digital Economy Act, a new 2010 U.K. act is an example of a successful legal action by BPI (the representative of the U.K.'s recorded music industry) against file sharers. See BBC, "BT and TalkTalk challenge Digital Economy Act," http://www.bbc.co.uk/news/10542400, July 8, 2010.
[72] Lawrence Lessig, "Code Version 2," (New York: Basic Books, 2006), 124.
[73] See Lawrence Lessig, "The Laws of Cyberspace."
[74] See Lawrence Lessig, "Code Version 2."
[75] Ibid.
[76] Ibid.
[77] See Lawrence Lessig, "The Laws of Cyberspace."
[78] ADB (Asian Development Bank) reports that in 2004, 16, 7% of population in Indonesia (or approximately 36 million individuals) was considered poor. See "From Poverty to Prosperity: A Country Poverty Analysis for Indonesia," http://www.adb.org/Documents/Reports/Poverty-Assessment-INO/Poverty-Assessment-INO.pdf#page=19, accessed on August 20, 2010.

cheaper than that of original software.[79] Without suitable pricing, markets may not regulate behavior as expected.

The final constraint is architecture or code. In cyberspace, code can be defined as a set of rules implemented through software or hardware, which creates cyberspace and regulates how people behave as well as interact in that space.[80] Just like in real space, architecture in cyberspace is not optional; anyone is subject to code and cannot choose whether or not to obey it.[81] Code acts as the constitution of cyberspace: in fact, in the case of an intellectual property issue, code can sometimes displace law.[82] Systems protect content from unauthorized access and illegal copying, and copyrighted material can be accessed only when a system allows that access. However, protection by code is not without defect, as it may not fully accommodate fair use of copyrighted material.

Lessig's theory of four modalities of regulation provides a cohesive analysis of behavior regulation, an analysis which could be very useful in cyberspace. The next section of this chapter will discuss the application of those constraints to IPTV-service copyright issues. This chapter will focus on how social norms, the market, and code are used to overcome copyright threats, such as illegal copying and sharing of IPTV content. The issue of copyright holders of IPTV content will be discussed in Chapter 4 alongside other law-related issues.

3.2. Application of Lessig's Theory in Indonesia

3.2.1. Copyright protection through social norms

Social norms are often underrated as means of regulation because they tend to be intangible. No written form is available, and norms apply differently in each society, making their application in cyberspace difficult. Nonetheless, social norms are powerful in every society and should be taken into consideration when regulators attempt to create new laws. Social

[79] A 2009 study by Business Software Alliance showed that Indonesia has a piracy rate of 86%; that out of 100 personal computers, 86 have unlicensed software. See The Jakarta Post, "RI remains 12th worst software pirate on weak enforcement," http://www.thejakartapost.com/news/2010/05/12/ri-remains-12th-worst-software-pirate-weak-enforcement.html, accessed on August 20, 2010.
[80] See Lawrence Lessig, "The Laws of Cyberspace."
[81] Ibid.
[82] Ibid.

norms can strengthen the effect of law and can also be the reason for disobeying a law, especially when the law conflicts with existing social norms.[83]

Norms also affect how a society views copyright law. When a copyright law imposes a certain social norm, the result is copynorms, which can be understood as social norms about copying, distribution, and use of expressive works.[84] Where copynorms exist, anyone can reap the fruits of her labor and nobody will reap where she has not sown.[85] However, in spite of copyright laws that impose harsh sanctions and that urge people to respect intellectual work, illegal copying and file sharing persist. The concept of copynorms has not been completely internalized in Indonesia, where copyright infringement is still prevalent in spite of copyright laws. Some scholars argue that the bulk of copyright infringement cases in Indonesia are caused by weak law enforcement.[86] This situation raises the question of whether copynorms with no official enforcement are still needed when the law itself has weak enforcement. Mark Schultz argues that even when legal enforcement is effective, social norms are the most significant complement to the law.[87]

Copynorms offer a solution to illegal file copying and sharing. Copynorms can be shaped through education and persuasive advertising, which can be preferable to regulation through law (with its harsh sanctions) or technological protection measures (with their inability to guarantee permitted acts).[88] However, education and persuasive advertising have their limitations. First, education is still limited by the fact that copyright infringement in cyberspace can happen anywhere with internet connection. The IPTV industry may have programs to educate people in a certain region or country where IPTV service is offered, but these programs will not reach all internet users. Second, as an experiment by Yuval Feldman and Janice Nadler revealed, advice is much less effective than the threat of sanctions when it comes to changing behavior.[89] The results of this experiment are useful in some respects, but

[83] Branislav Hazucha, "Enablement of Copyright Infringement-A Role of Social Norms in the Regulation of Dual-Use Technologies," http://ssrn.com/abstract=1462261, accessed on August 20, 2010.
[84] Mark F. Schultz, "Copynorms: Copyright Law and Social Norms," http://escholarship.org/uc/item/7c94551s, accessed on August 20, 2010.
[85] Ibid.
[86] See Simon Butt and Tim Lindsey, "TRIPs, Intellectual Property Law Reform in Indonesia: Why Injunctions aren't Stopping Piracy."
[87] See Mark F. Schultz, "Copynorms: Copyright Law and Social Norms."
[88] Ibid.
[89] This experiment is an experiment with 240 participants of undergraduate students at UC Berkeley. The experiment observed the participants' response to various persuasive messages about file sharing. One group

may not represent the overall picture of education's role in copyright enforcement. Therefore, an IPTV operator should not underestimate the importance of education for the future of copyright in Indonesia.

Besides education and persuasive advertising, there are other ways in which social norms can play a role in copyright protection. Schultz suggests the following four methods: a) cultivate communities based on sustained relationships, b) improve perceptions of fairness, c) give people a chance to comply with copyright law, and d) involve fans in enforcement.[90] Not every suggestion can be enforced by an IPTV operator alone. For instance, fan involvement may not be a practical solution for an IPTV operator, because the IPTV operator does not automatically own the copyright. It is more practical for the copyright owner (such as a production house company or recording company) to directly mobilize fans to enforce copyright, because an IPTV operator can only act as an intermediary service between content providers and subscribers.

Although the use of social norms to protect copyright does not offer instant results, it does offer a strong strategy for creative industries looking for a long-term business plan. In the case of Indonesia, IPTV should work together with other creative industries to educate Indonesians about the importance of copyright. Education can also play a role in building copynorms, especially if targeted to younger generations who are likely to share files without understanding copyright. With strong education in copyright law, people may gain a better appreciation of copyrighted work, an attitude which may reduce illegal copying and file sharing over the Internet.

3.2.2. Copyright protection through the market

In his theory of the four modalities of regulation, Lessig mentions that markets regulate through price. IPTV executives should creatively develop economic efficiency and adapt the

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heard a statement saying that file sharing was illegal and against university policy, and another heard a statement saying file sharing was immoral. Participants were asked to express their attitude towards file sharing, and no significant difference was produced between the two groups. However, the result was different for groups who received threat of sanctions (either informal or formal) if they shared files illegally. This experiment demonstrated the effectiveness of threats in changing people's behavior. See Mark F. Schultz, "Copynorms: Copyright Law and Social Norms."

[90] Ibid.

newest technological developments instead of continuing to apply textbook economics.[91] They should understand how to set the price of content and combine with the application of Digital Rights Management (DRM) so that the price will meet their customer's budget. Lower prices could be one alternative, since low prices will make obtaining copyright-infringing copies much more expensive than obtaining them lawfully.[92] Alternatively, IPTV operators can modify content using the latest technological protection measures, which will make circumventing such measures more costly for the user.[93]

The IPTV industry could also learn from the music industry's experiences in facing copyright infringement. For example, the music industry's strategy of "versioning" could be applied in the IPTV industry as well.[94] Versioning provides consumers with a range of services, from which they can select different versions and prices.[95] For example, IPTV operators offer their first-time customers free previews or low-price introductory offers; offer their basic customers lower prices; and offer devoted customers enhanced service features.[96] Through this method, IPTV operators personalize subscriptions and may apply different technological measures to different subscribers. As a result, differentiated versions will indicate different access rights, length of service, price, and security protection. The more valuable the content, the more protection is given.

Another lesson from the music industry pertains to "superdistribution" business models. Superdistribution is defined as technology which enables content to be distributed multiple times.[97] The following business models enable super-distribution and can be implemented to prevent illegal copying and file sharing:[98]

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[91] Michael A. Einhorn and Bill Rosenblatt, "Peer-to-Peer Networking and Digital Rights Management: How Market Tools Can Solve Copyright Problems," http://www.cato.org/pub_display.php?pub_id=3670, accessed on August 20, 2010.
[92] See Kenneth R. Carter, "Intellectual Property Concerns for Television Syndication Over the Internet," 151.
[93] Ibid.
[94] See Michael A. Einhorn and Bill Rosenblatt, "Peer-to-Peer Networking and Digital Rights Management: How Market Tools Can Solve Copyright Problems."
[95] Ibid.
[96] Ibid.
[97] Ibid.
[98] Ibid.

1. Paid access and controlled sharing:

   On Demand service, provided by MusicMatch, allows subscribers to send playlists to non-subscriber friends. About twenty songs from a playlist can be played for a maximum of three times before subscriber's friends are asked to pay for individual downloads or for service subscription. This will allow a subscriber to share favorites with his friends without violating copyright. Such a business model could be applied to the IPTV industry: the subscriber could send IPTV content to friends to be viewed for certain period of time (as limited by technical measures) before the IPTV operator asks for a subscription fee. This model would not only limit illegal P2P file sharing; it would also serve as a good promotional tool for the IPTV service.

2. Unlimited sharing of approved content for a fixed fee:

   Wippit, a service based in the U.K., allows their subscribers to download content and share them with other subscribers. However, such actions could be done only with prior approval of the content owner, and not all content will necessarily be shared. This model could be implemented in the IPTV industry if content owners were to allow content sharing between subscribers and non-subscribers. Such a model would allow IPTV services to provide content that can be shared freely without infringing copyright. This model never pushes copyright boundaries, and it can accommodate a subscriber's desire to share content with others.

3. Downloads with alternate compensation:

   Qtrax is a service which, upon approval of copyright owners, offers free downloads in exchange for advertisement viewing. There are no registration or download fees, but there are viewing restrictions: content from Qtrax is equipped with geographical and digital-rights-management limitations.[99] This business model could allow IPTV companies to offer limited free content without losing money, because advertisements will pay for content.

[99] For example, users in the Netherlands cannot download songs from Qtrax, while users in Indonesia can. In addition, content from Qtrax is wrapped in Windows Media DRM, which allows the company to trace how their costumers use a song. Ken Fisher, "Qtrax's free, ad-based P2P: Gnutella meets Zune-esque DRM," http://arstechnica.com/tech-policy/news/2008/01/qtraxs-free-ad-based-p2p-gnutella-meets-zune-esque-drm.ars, accessed on August 22, 2010.

4. Distributed agencies:

   Providers on Shared Media Licensing's Weed technology enable users to recommend tunes to their friends through email and blogs provided by the network. Meanwhile, network users can buy content protected by Microsoft DRM technology. This business model could prove useful for IPTV companies, since it allows the subscriber to recommend content to their friends and allows IPTV operators to promote content without violating copyright.

The above business models can be adapted from the music industry; however, the music industry and the IPTV industry differ in the purpose and nature of their content distribution. The music industry offers digital music with the intention of selling either a song or an album.[100] Meanwhile, IPTV service offers content for single viewings, not for sale. IPTV may not offer their content for sale because most IPTV content is in film form. Moreover, IPTV provides VoD service, which allows subscribers to watch the film at any time they want; therefore, it is not necessary for an IPTV subscriber to buy a film or a series of programs. Perhaps in future the IPTV industry like the music industry, will sell content in addition to common service. In the meantime, the differences between these industries will result in a different application of business models: the IPTV industry can start with offering free or low prices for content viewing without selling content, as the music industry does.

3.2.3. Copyright protection through technology

IPTV service requires high levels of security and protection of content in order to transmit the content over the Internet, so that the system will block any unlawful acts such as illegal copying and file sharing of IPTV content. To do so, IPTV operators must install technological protection measures (TPMs) intended to use code to regulate copying, distribution, and use of and access to digital works.[101] Another term which is often related to

[100] There are many types of digital music businesses: some permanent downloads, some only temporary downloads enforced by technical measures. For example, MusicNet and Pressplay do not support permanent downloading or burning. Meanwhile, Apple, with its DRM system named FairPlay, allows buyers to transfer the song to their iPods, burn unlimited copies of CDs, and transmit downloaded song to three other hard drives. See Michael A. Einhorn and Bill Rosenblatt, "Peer-to-Peer Networking and Digital Rights Management: How Market Tools Can Solve Copyright Problems."

[101] Urs Gasser, "Legal Frameworks and Technological Protection of Digital Content: Moving Forward towards a Best Practice Model," http://ssrn.com/abstract=908998, accessed on August, 24, 2010.

TPMs is DRM. DRM is a kind of TPM and both are related to control measures and serve to protect copyright.[102] This thesis will not discuss the differences between the two and TPM can simply be understood as DRM technology.[103]

The application of DRM is not without its flaws. DRM can be too expensive, threaten privacy, and prevent permissible acts.[104] Nonetheless, it is impossible for IPTV service to operate without DRM; content protection is essential for copyright protection, and in certain conditions, content providers acting as copyright holders require DRM. Therefore, in spite of the many criticisms against DRM, IPTV operators could not run IPTV services without DRM applications.

There are many protection schemes available on the market, but overall those schemes fall into three main categories: content protection systems (CPSs), conditional access systems (CASs), and DRM.[105] CPSs are used to protect content against theft, and only authorized subscribers can view content.[106] Especially for VoD and live programs, CPSs are useful for preventing unauthorized parties from decoding the content or redistributing original content.[107]

CASs work on the same principle as CPSs: CASs are intended to ensure that only subscribers have access to the content and to create a safeguard against theft of service by controlling access to content.[108] CASs can be applied in several ways:[109]

1. Hardware:

[102] European Law distinguishes TPMs and DRM, where TPM is referred to any technology, device or component designed to prevent or restrict acts unauthorized by the rights holder, while DRM is referred to as any embedded information identifying the work or about terms and conditions of use. However, for simplicity's sake both are usually referred to as DRMs. See Copyright & IPR – Manual at http://ec.europa.eu/information_society/eyouguide/fiches/glossary_ipr/index_en.htm, accessed on August 25, 2010.
[103] See Paul Ganley, "Copyright and IPTV."
[104] Ibid.
[105] See Gerard O'Driscoll, *Next Generations IPTV Services and Technologies*, 82.
[106] David Ramirez, *IPTV Security*, (John Wiley & Sons Ltd, Chichester: 2008).
[107] Ibid.
[108] Ibid.
[109] See Gerard O'Driscoll, *Next Generations IPTV Services and Technologies*.

There are many types of CAS hardware, including encryption and smart cards, which can be applied in IPTV service. The encryption key is related to an algorithm that encrypts and decrypts information, providing a high level of security. Meanwhile, smart cards are used to provide authentication of services to IPTV systems.

2. Software:

   Software can also have a variety of security applications. The unique characteristics of software systems include:

   a. IPTV subscribers do not need smart cards and readers to view IPTV content.
   b. Software can fix security breaches within seconds.
   c. Systems require internet connection at all times.

3. Hybrid hardware and software solutions:

   This approach does not require a smart card; instead, the decryption is embedded directly into an IP set-top video box and takes place inside either a video processor or a special security processor.

DRM is also needed to prevent unauthorized access and to deploy a digital license set up by content owners and IPTV operators.[110] DRM can be applied differently depending on the types of IPTV content and on the hardware features of the IPTV set-top box.[111] For example, DRM is mostly applied to VoD content because delivery of VoD content involves storing content on IPTV consumer devices, where the risk of piracy is quite high.[112] However, now DRM is also applied to live broadcasts of IPTV channels so that content is protected before and during transmission.[113] DRM could also be applied differently depending on the agreement between content provider and IPTV operator. Some content cannot be saved or recorded, while other content has less stringent DRM applications.

The experience of digital music industry teaches that technology as code cannot guarantee perfect copyright protection when it comes to IPTV content. Nonetheless, technological measures are still important. The application of technology measures to IPTV service could combine different types of CA systems as well as DRM.

[110] See David Ramirez, *IPTV Security*.
[111] See Gerard O'Driscoll, *Next Generations IPTV Services and Technologies*.
[112] Ibid.
[113] Ibid.

3.2.4. Copyright protection through law

Copyright law is a basic and fundamental tool to protect copyright. Indonesia has copyright laws in place, and is in fact a signatory country of the TRIPS agreement, the Berne Convention, and the WIPO Copyright Treaty (WCT).[114] Because Indonesia's copyright law extends protection to foreign works (even if the law's enforcement is far from perfect), IPTV providers providing overseas content in Indonesia will have greater assurance that their content will be secure.[115]

As previously mentioned, law can be used as a remedy in two important IPTV-service copyright issues. How Indonesian copyright law will work to overcome these issues remains vague, since IPTV service in Indonesia is not yet operating fully; however, these two copyright issues could threaten the future expansion of IPTV service in Indonesia. To gain a broader view of how law can be deployed to overcome copyright issues, Indonesian regulators must learn from other countries with more experience in IPTV service. IPTV service has existed in the U.K. for more than ten years, and U.K. copyright law can be used as a model for improvements in Indonesian copyright law. The next chapter will further discuss and compare Indonesian and U.K. copyright law.

3.3. Conclusion

IPTV service is still a relatively new business in Indonesia and has not yet begun operating fully. However, in light of the copyright issues of the music industry, it is better to prepare sufficient copyright protection before the expansion of IPTV service in Indonesia. Though Lessig's constraints of the market, social norms, and code are all crucial, their regulation

[114] Certain countries, such as Iran, have little to no copyright protection on any foreign works. This is because Iran has ratified neither the Berne Convention, nor the WCT, nor other treaties and conventions relating to copyright. See US Copyright Office, "International Copyrights Relations of United States," http://www.copyright.gov/circs/circ38a.pdf, accessed on August 14, 2010.

[115] Article 76 (b) and (c) Copyright Law No. 19 year 2002 mentions that the copyright act applies to "*all works of any non-Indonesian citizens, non-Indonesian residents and non Indonesian legal entities that are published for the first time in Indonesia and all works of any non-Indonesian citizens, non-Indonesian residents and non Indonesian legal entities, provided that: (i) their country has bilateral agreements on the protection of Copyright with the Republic of Indonesia; (ii) their country and the Republic of Indonesia are parties or member countries of the same multilateral agreement on the protection of Copyright.*"

cannot overcome other copyright issues such as ownership of IPTV content. The law is still the fundamental means of overcoming IPTV's copyright issues. Therefore, understanding Indonesian copyright law is crucial for battling these potential copyright issues.

Chapter 4: Copyright Protection Through Law

4.1. Introduction to Indonesian Copyright Law

Indonesian intellectual property has its roots in the nineteenth century, when Indonesia was a Dutch colony. The first regulation relating to intellectual property was the Act on the Granting of Exclusive Rights to Inventions, Introductions, and Improvements of Object of Art and of the People's Diligence, which was introduced in the Netherlands in 1817 and afterward applied in Indonesia.[116] Another Dutch act, the Copyright Act, was also applied in Indonesia in 1912 soon after its enactment in the Netherlands.[117] In 1982, a new national copyright act replaced the colonial act.[118] This 1982 act has been revised several times to take into account international conventions and agreements which have since been ratified.[119] In July 2002, Indonesia enacted Act No. 19 year 2002 as the latest act regarding copyright (Copyright Law 2002).

4.2. Application of Indonesian Copyright Law to IPTV Copyright Issues

Indonesian copyright law does not provide a definition of copyright infringement. The provisions about copyright infringement are scattered among many articles. Understanding the function and nature of copyright can help us understand what defines its infringement. Copyright, according to Copyright Law 2002, is intended to give an exclusive right for the copyright holder to publish or reproduce his work.[120] According to the Elucidation of article 2(1) of Copyright Law 2002, exclusive right means that the right belongs solely to the copyright holder and that no one can use the work without authorization.[121] If IPTV content is

[116] Christoph Antons, "Indonesia," in MPI Studies on Intellectual Property, Competition and Tax Law, 1, Volume 9, Intellectual Property in Asia, http://www.springerlink.com/content/j411h161522t3218/fulltext.pdf, accessed on August 13, 2010.
[117] Ibid.
[118] The title of the act is *Undang-undang Hak Cipta No. 6 tahun 1982* (Law No. 6 year 1982 regarding copyright).
[119] These international agreements include the TRIPS Agreement through Act No. 7 year 1994, the Berne Convention through Presidential Decree No. 18 year 1997, WIPO Copyright Treaty (WCT) through Presidential Decree No. 19 year 1997 and WIPO Performances and Phonograms Treaty (WPPT) through Presidential Decree No. 24 year 2004.
[120] Article 2(1) of Copyright Law 2002
[121] However, some exceptions apply. Article 14 and 15 of Copyright Law 2002 gives freedom to use the copyrighted work to a certain limit, such as for the purpose of news reporting, education, reproduction of work

used without authorization, then an IPTV content owner could act against the infringer through court procedure in either civil or criminal court.

As mentioned in Chapter 3, certain copyright issues on IPTV service can be solved only by law, such as the issue of ambiguous copyright holders of a particular IPTV content. Therefore, this next section will discuss how Indonesian copyright law addresses IPTV-service copyright issues (described in Chapter 2). The U.K. copyright law will be explained as well, since the U.K. has years of experience in the IPTV business while Indonesia has none. Furthermore, how Indonesian copyright law and U.K. copyright law address copyright issues in IPTV service will be discussed.

4.2.1. Copyright holders of IPTV content

There are two main problems regarding copyright holders of IPTV content. The first problem is the interactive feature in IPTV service, which raises the question of whether a suggestion or an opinion about the storyline is protected by copyright law. If so, could those participating viewers have any rights to the series, or could they ask for a fee based on joint authorship of such IPTV content? What can IPTV operators do to ensure that all their content, including interactive content, is broadcast without infringing copyright? The second problem regarding copyright holders relates to UGC, where there are two important concerns: 1) does the content infringe copyright and 2) who owns the content. Below is discussion of these two problems from the perspective of Indonesian law.

a. <u>Suggestion or opinion in interactive content:</u>

Copyright Law 2002 acknowledges many kinds of protected works. IPTV content, for instance, is protected under the category of cinematographic works.[122] However, the Elucidation of Copyright Law 2002 mentions that copyright does not apply to an idea or suggestion (as in interactive content) because a protected work must demonstrate unique features and originality, in a format that the work will be seen, read or heard. Therefore,

in Braille (unless for commercial use), and the creation of a back-up copy of a computer program solely for personal use.

[122] According to the Elucidation of Article 12 (1) k Copyright Law 2002, cinematographic works are defined as communication media of moving images, such as documentary film, commercial film, advertisement, and/or film created with scenario and cartoon film. All of these could be produced in any media which enable them to be broadcast in cinema, big screen, television, or other media.

as long as a contribution remains an idea or suggestion, it cannot be protected by Copyright Law 2002. To enjoy copyright protection, a suggestion or opinion in an interactive feature should be in the form of one of the types of works regulated in Copyright Law 2002. This is arguably the intention of the producer of such a program; producers do not ask for ideas or suggestions in the form of completed, copyrighted work because they do not want to encounter copyright issues. This phenomenon can be seen in "The Deadwood Mysteries" series, where viewer participation occurs by sending thoughts through email. Participating viewers were not asked to develop a scenario or a complete story of an episode. Emails containing suggestions are arguably not sufficiently developed to be protected as copyrighted work. Additionally, the idea or suggestion is not automatically applied to the series; the producer controls the series' plot and the suggestion remains merely a suggestion.

Though an idea or suggestion is not protected by copyright, Copyright Law 2002 does not offer a clear answer to the question of whether such an idea has copyright protection. Even if the idea is protected by copyright, Article 6 of Copyright Law 2002 states that "*if a work consists of several separate parts that were created by two or more persons, the person deemed to be the Author shall be the one who led and supervised the completion of the entire work, or … the person who compiled them …*". Therefore, any viewer who contributes suggestions to the series cannot be deemed as copyright holder or the author of a particular episode. The copyright remains in the hands of the producer/screenwriter (or whoever holds the copyright to the script) or in the hands of the series itself.

b. <u>UGC:</u>

The second IPTV content issue relates to UGC. As previously explained, UGC is created by IPTV users who are not professional content providers. Therefore, two important issues arise with UGC: 1) does the content infringe copyright and 2) who owns the content.[123] Without clear answers to these two questions, IPTV operators should think twice before they broadcast UGC, or they might encounter copyright issues.

[123] See Paul Ganley, "Copyright and IPTV."

Regarding the first issue, IPTV operators should ensure that UGC does not infringe on copyright. Article 72(2) of Copyright Law 2002 regulates that "*Any persons who deliberately broadcasts, exhibits, distributes, or sells to the public a work or goods resulting from an infringement of copyright … shall be sentenced to imprisonment … and/or a fine…*". IPTV operators may argue that they were not aware that UGC used infringing material and that they had no intention of broadcasting infringing content. However, it is better for IPTV operators to avoid engaging in any infringing activities, including broadcasting UGC containing infringing material. IPTV operators can protect themselves by entering into an agreement with the UGC creators shielding them from any obligation, claim, or damages that arise from broadcasting UGC.

The second UGC-related issue has to do with identifying the copyright holder of UGC. Copyright Law 2002 gives the copyright holder the exclusive rights to publish or reproduce his work, rights which emerge automatically after the creation of the work. In addition, Article 2(2) of Copyright Law 2002 states that "… *a Copyright Holder of a cinematographic work … shall have the right to give permission or to prevent any other person whom without his/her approval rents out the work concerned for commercial purposes*." Although the creators of UGC are not professionals and often create without any commercial intention, they still have the copyright of their content. Therefore, IPTV operator must ask permission from UGC creators before broadcasting UGC. The Regulation of Minister of Communication and Information No. 11/PER/M.KOMINFO/07/2010 regarding operation of IPTV service in Indonesia (Minister Regulation No. 11/2010) requires that content be lawfully obtained. Article 23 of Minister Regulation No. 11/2010 obliges IPTV operators to protect the content from copyright infringement, which includes: a) obtaining the right of each of the broadcast content; b) stating the right of IPTV operator to broadcast the content; and c) guaranteeing security and protection of the content from the possibility of piracy and/or illegal redistribution. If the IPTV operator fails to do so, administrative sanctions can be imposed.[124]

[124] Administrative sanctions will not extinguish a criminal suit against such a misdemeanor. See Article 34(3) of Minister Regulation No. 11/2010.

IPTV operators can obtain UGC copyright by entering into an agreement with a UGC creator or by other means, as regulated in Copyright Law 2002.[125] Some providers may include an ownership provision in their terms and conditions, which deem all uploaded content the exclusive property of the provider. Alternatively, they may ask UGC creators to grant them a non-expiring, royalty-free license.[126] If the IPTV operator has set up an agreement with the UGC operator ownership of the content, then the IPTV operator should ensure that such content does not infringe on copyright.

4.2.2. Illegal copying and file sharing

An additional copyright issue may arise when a third party has infringed on IPTV content. To make the infringer liable for copyright infringement, the copyright holder can process a claim through civil or criminal procedure. However, Copyright Law 2002 does not provide detailed definitions of copyright infringement. Article 56(1) of Copyright Law 2002 states that a copyright holder can bring a lawsuit to the Commercial Court against a copyright infringer. As for criminal procedure, Article 72 and 73 of Copyright Law 2002 penalizes certain prohibited acts:

a. Breaking technological control measures:

There are several provisions of Copyright Law 2002 which can be applied to all cases of illegal copying and file-sharing. First, according to Copyright Law 2002, an infringer needs to break DRM or technological control measures in order to make illegal copies.[127] Technological control measures are crucial for controlling access as well as copying capabilities. Article 27 of Copyright Law 2002 mentions that without permission of the copyright owner, technological control measures shall not be damaged, destroyed, or made to malfunction. If this occurs, a hacker could face criminal sanctions followed by imprisonment of maximum two years and/or a maximum fine of one hundred and fifty million rupiahs.[128] Any infringer can be automatically charged under this provision.

[125] Article 3 of Copyright Law 2002 mentions five ways to transfer the rights: inheritance, donation, testament, written agreement and other reasons justified by regulations.
[126] See Paul Ganley, "Copyright and IPTV."
[127] Elucidation of Article 27 of Copyright Law 2002 defines technical control measures as technical instrument formed in among other secret code, password, bar code, serial number, decryption and encryption, where it is used to protect the work.
[128] Article 72(8) of Copyright Law 2002.

In addition to the Copyright Law of 2002, Article 27 through 37 of Law No.11 year 2008 regarding Electronic Information and Transaction (ITE Law) identifies prohibited acts and provisions for the hacking of an IPTV security system. For example, Article 30 (3) of ITE Law criminalizes "*anyone who knowingly and without authority or unlawfully accesses Computers and/or Electronic Systems in any manner whatsoever by breaching, hacking into, trespassing into, or breaking through security systems.*" If anyone performs these prohibited acts, he or she will be sentenced to imprisonment for maximum eight years and/or to a maximum fine of eight hundred million Rupiah.[129] This provision does not require that the court investigate whether illegal copying and file sharing results, since the prohibited act is the act of breaching, hacking or breaking the security and protection system. The ITE Law protects the IPTV security system and can also be applied to protect content copyright.

Indonesian law is attentive to protecting technological control measures. In fact, breaking technological control measures results in harsh sanctions, whether or not illegal copying and file sharing ensues.

b. Who should be liable for illegal copying and file sharing?

IPTV content is an exclusive content and according to Article 2(1) of Copyright Law 2002, violations of exclusive rights can be sentenced to imprisonment for a minimum of one month and a maximum of seven years, and/or sentenced to a minimum of one million rupiahs in fines and a maximum of five billion rupiahs. The violation of exclusive right can be interpreted in many ways but always includes the infringer's violation of the copyright holder's exclusive right to publish or reproduce the work. According to the Elucidation of Article 2(1) of Copyright Law 2002, the definition of "to publish or reproduce" includes translating, adapting, arranging, remodeling, selling, renting, borrowing, lending, importing, displaying, exhibiting to the public, broadcasting, recording, and communicating to the public through any type of media.[130] Article 72(1) of Copyright Law 2002 punishes any act referred to in Article 2(1), whether the act is

[129] Article 46 (3) of ITE Law.
[130] Elucidation of Article 2(1) of Copyright Law 2002.

committed by a direct infringer or an end user who deliberately copies and shares illegal content.

Unlike U.S. law, Indonesian copyright law does not recognize the concept of secondary liability. However, Copyright Law 2002 does contain several provisions that apply to indirect infringers. Third parties with a history of copyright infringement, like P2P services, are often assumed to be indirect infringers. Before any allegations are made against a P2P service, copyright owners should understand that not all P2P services provide illegal materials. P2P services are liable for copyright infringement only when they provide infringing work to the public.[131] Although Copyright Law 2002 contains no specific provision regarding the liability of a P2P service, a copyright owner can use Article 2(1) of Copyright Law 2002 pointing to the copyright owner's exclusive right. Moreover, Copyright Law 2002's definition of "to publish or reproduce" is wide and could include P2P service. In addition, P2P service enables internet users to access, copy, and share the content without needing to pay a fee to a copyright owner. Therefore, Article 72(1) of Copyright Law 2002 can be applied to make P2P service liable for copyright infringement; the right to share copyrighted work belongs exclusively to copyright holders and a P2P service lacks the right to make copyrighted content available to the public without prior permission.

ISP can be held liable for digital copyright, when ISP provides service that can be used by customers for illegal actions such as copyright infringement. However, ISP cannot be sued using Article 72 of Copyright Law 2002, because Copyright Law 2002 clearly regulates that infringing activity must be done deliberately. However, a bill of Regulation of Minister of Communication and Information regarding Handling Procedure of Report or Complaint of Internet Content, which asks for ISP's liability, is now waiting to be passed.[132] The bill defines illegal content as content that conflicts with the law. Because the definition of illegal content is so wide, pirated material can fall into that category. In

[131] According to WCT Article 8 and WPPT Article 10 and 14, this includes making work available to the public in such a way that members of the public may access these works from a place and at a time individually chosen by them. See Michael Schlesinger, "Legal issues in peer-to-peer file sharing, focusing on the making available right," in *Peer-to-Peer File Sharing and Secondary Liability in Copyright Law*, edited by Alain Strowel, (Glos: Edward Elgar Publishing Limited, 2009), 46.

[132] Previously, the title of the bill was "Multimedia Content." The bill was cancelled and was then changed along with a new title, but regulates in the same way. See Tempointeraktif, "Berganti Nama Pun, RPM Multimedia Tetap Kekang Pers," http://www.tempointeraktif.com/hg/kesra/2010/06/26/brk,20100626-258619,id.html, accessed on August 17, 2010.

addition, the bill demands the ISP's liability to process a copyright infringement settlement upon receiving the report or complaint about illegal content. The bill offers procedures for content owners to ask an ISP to block internet access if they discover content infringement.[133] This may not be the best solution for copyright infringement, because internet blocking raises questions of privacy and restriction of freedom of expression. Another issue with ISP liability relates to the system of licensing IPTV service. IPTV operators in Indonesia must obtain three licenses, including the license to operate as an ISP.[134] If IPTV grows more prevalent in Indonesia, then such a bill will not effectively enforce copyright of IPTV content; it is impossible for IPTV operators to sue ISPs since the former also operate as ISPs. Debate about blocking internet connection persists, and Indonesia will likely continue to regulate ISP liability in spite of objections.

We have seen that in the case of IPTV copyright infringement, a copyright holder can sue the end user, the P2P, or the ISP (if the bill of Regulation of Minister of Communication and Information regarding Handling Procedure of Report or Complaint of Internet Content is passed). Additionally, the IPTV operator itself can be held liable for infringement. According to Minister Regulation No. 11/2010, the copyright holder can ask for the IPTV operator's liability, and Article 23 (2) point c of Minister Regulation No. 11/2010 obliges IPTV operators to guarantee security and protection of the content from the possibility of piracy or illegal redistribution. As mentioned above, administrative sanctions are available when the IPTV operator breaches provisions of Minister Regulation No. 11/2010.[135] Administrative sanctions vary under Article 34 of Minister Regulation No. 11/2010, ranging from early written warnings to revocation of the IPTV operator's approval letter as the ultimate sanction.[136] Revocation of approval letters can have a significant negative effect on the IPTV business in Indonesia. Meanwhile, the Minister Regulation No. 11/2010 does not clearly define the standard of IPTV security and protection. What constitutes negligence of copyright protection? Is the IPTV operator completely liable if IPTV content is infringed, even if the operator has acted preemptively in setting up technical protection measures? The answers to these questions could not be

[133] Article 8(1) bill of Regulation of Minister of Communication and Information regarding Handling Procedure of Report or Complaint of Internet Content.
[134] Article 5(2) b of Minister Regulation No. 11/2010.
[135] Article 34(3) of Minister Regulation No. 11/2010
[136] Obtaining an approval letter is part of the licensing procedure for IPTV operators to run their businesses in Indonesia. The approval letter is issued by the Minister after the administrative evaluation and technical evaluation and remains valid for ten years. See Article 29 and 30 of Minister Regulation No. 11/2010.

found in the regulation, leaving the decision to the Minister of Communication and Information. The IPTV operator is undoubtedly obliged to protect copyright due to the agreement between the operator and the content provider or copyright owner, but the demanding new regulation will push IPTV operators to protect the content maximally, because their approval letter is in jeopardy. The sophisticated technological content-protecting control measures are expensive for the operator and unfortunately cannot guarantee protection.

4.2.3. Indonesian copyright law enforcement

Law enforcement is a critical issue in Indonesia. In 2009, Indonesia had the highest piracy level in the world; as a result, in its 2010 report, the IIPA recommends that Indonesia remain on Priority Watch list.[137] This situation is not conducive to the growth of the IPTV industry, because IPTV relies on copyright protection. Therefore, IPTV industry should pay attention to Indonesian copyright law enforcement in order to understand how to enforce their copyright. This section explores how this can be done, and how copyright protection through law is rendered meaningless if not properly enforced.

a. Remedies for copyright infringement:

Indonesia is a member of several international agreements and treaties related to intellectual property, such as the TRIPS Agreement and the Berne Convention. Copyright Law 2002 is pursuant to those international conventions, including provisions for both criminal and civil enforcement. As previously discussed, Copyright Law 2002 emphasizes copyright enforcement through criminal procedure. However, if a copyright owner prefers civil remedy, then a copyright owner can bring a lawsuit to the Commercial Court for damages against the infringer and can request confiscation of the results of infringement.[138] In addition, a copyright holder is entitled to request that the Commercial Court issue an order for delivery of income generated from performances or exhibitions of infringing works.[139] Therefore, in addition to civil and criminal enforcement,

[137] IIPA, "Indonesia-International Intellectual Property Alliance (IIPA) 2010 Special Report on Copyright Protection and Enforcement," http://www.iipa.com/rbc/2010/2010SPEC301INDONESIA.pdf, accessed on January 31, 2011.
[138] Article 56 (1) of Copyright Law 2002.
[139] Article 56(2) of Copyright Law 2002.

Copyright Law 2002 also recognizes arbitration and alternative dispute resolution as another means of dispute settlement.[140]

In the case of copyright infringement, it is important that a copyright holder prevents further loss from the infringement activity. As recognized in many jurisdictions, interlocutory injunction (a temporary injunction intended to prohibit continuation of infringement) is the proper remedy for this issue. Many countries view interlocutory injunction as an important remedy because court proceedings tend to waste time and money, while interlocutory injunctions often lead to a settlement.[141] Interlocutory injunction (known as "*penetapan sementara pengadilan*" or "provisional decision") is available under Copyright Law 2002, which states that a provisional decision is intended to prevent the continuation of copyright infringement and to prevent the entry of infringed goods into the channels of commerce.[142]

b. Law enforcement:

Indonesian copyright law provides different remedies for copyright violation in line with international conventions, but weak law enforcement remains the biggest challenge for copyright protection. Simon Butt and Tim Lindsey state that corruption is the greatest systematic dysfunction in Indonesia's judicial process and frequent corruption severely affects the judicial process from its earliest stages.[143] Indonesia has anti-corruption laws in place; however, ironically, courts have high levels of corruption which are carried out openly.[144] Other arms of justice, such as the national police and public prosecution services, are also wracked with corruption.[145] The national police have a poor reputation in the eyes of the justice seeker; corruption is institutionalized and almost any criminal

[140] Elucidation of Article 65 of Copyright Law 2002 defines alternative dispute resolution as negotiation, mediation, coalition, or another way agreed to by both parties as regulated in applicable laws.
[141] European Commission, "Analysis of the application of Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights in the Member States," http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2010:1589:FIN:EN:PDF, accessed on January 31, 2011.
[142] Elucidation of Article 67(a) of Copyright Law 2002.
[143] It is common for litigants to use "facilitation money" to prevent long waiting times, which can be more than three years from the filing to the hearing of the case. See Simon Butt and Tim Lindsey, "TRIPs, Intellectual Property Law Reform in Indonesia: Why Injunctions aren't Stopping Piracy."
[144]World Bank, "Combating Corruption in Indonesia-Enhancing Accountability for Development," http://siteresources.worldbank.org/INTINDONESIA/Resources/Publication/03-Publication/Combating+Corruption+in+Indonesia-Oct15.pdf, accessed on February 2, 2011.
[145] Ibid.

procedure can be settled by a broker of cases.[146] Indonesian public prosecution is also well known for corruption. Indonesia's corruption can be understood through the lens of its economic conditions. A study from Price Waterhouse Coopers found that the state budget underfunds the activities of the public prosecution service, who then must seek unofficial payment through corrupt practices.[147]

Corruption in judicial process remains prevalent and will likely have an effect on copyright enforcement, especially when copyright cases are considered less important than visible, media-centered cases having to do with pornography or corruption. In addition, as Simon Butt and Tim Lindsey argue, there are several reasons why injunctions will have little or no effect on copyright enforcement in Indonesia: 1) there are only several Indonesian producers of copyrighted work who will benefit from copyright enforcement; 2) more effective enforcement will likely to raise the price of content, making copyrighted works less affordable for most Indonesians; and 3) thus far Indonesia manages to attract foreign investment even with weak law enforcement, meaning Indonesia has no incentive to enforce copyright law.[148]

Though Indonesia's laws may be pursuant to international conventions, a wide gap persists between the written law and practice. Corruption is present at every stage of the judicial process, and copyright enforcement is not valued. Therefore, the copyright holder should currently think twice before filing a lawsuit and should consider alternative dispute resolutions, such as arbitration.

4.3. IPTV in the U.K.

Though the U.K. is not the leader of the European IPTV industry, it has one of the most advanced digital television markets in Europe.[149] IPTV service in the U.K. remains rather

[146] Ibid.
[147] Prosecutors are expected to pay for their own costs of transportation and food while on assignment (on their very limited salaries), and even expected to pay court clerks to schedule cases. See World Bank, "Combating Corruption in Indonesia-Enhancing Accountability for Development."
[148] See Simon Butt and Tim Lindsey, "TRIPs, Intellectual Property Law Reform in Indonesia: Why Injunctions aren't Stopping Piracy."
[149] In 2005, there were fewer than 25,000 IPTV subscribers in the U.K. The early development of IPTV market in the U.K. was unpromising, but significant developments in both broadband and digital television contributed to IPTV growth. See Andrew Fawcett, "iTunes for TV? IPTV in the UK," http://www.ebu.ch/en/technical/trev/trev_303-fawcett.pdf?display=EN, accessed on June 23, 2010.

new; the service was first launched in 2000 by Kingston Communication. Recently, two major IPTV operators have emerged in the U.K.: Tiscali and BT Vision.[150] On March 2007, Tiscali television launched IPTV service in London, a service which is now available across the U.K.[151] With their HomeChoice offering, Tiscali offers combined television, VoD, and broadband Internet access. By the end of 2008, Tiscali had about 100,000 customers in the U.K.[152] Meanwhile, BT Vision launched IPTV service at the end of 2006, offering over 40 free-view television channels and thousands of hours of VoD, 80 hours of personal video recorder, and rich interactive service.[153] Details about the development of IPTV services in the U.K. can be seen in Figure 2.

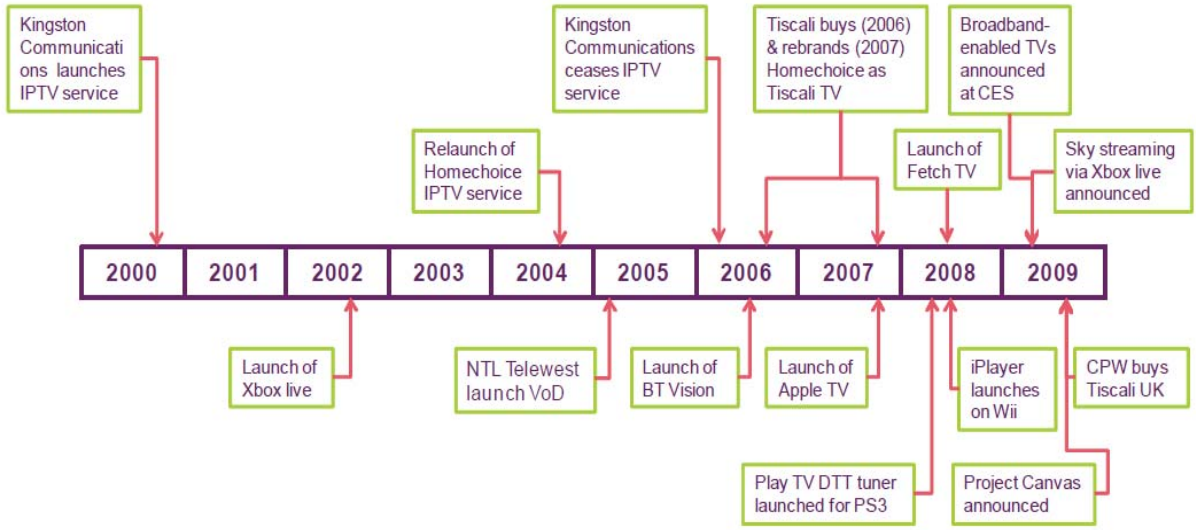

Figure 2: Timeline of development of IPTV and other audio-visual services in the U.K.[154]

[150] Tiscali's U.K. businesses providing internet and telecommunication services have been taken over by Carphone Warehouse, and as of January 2010, the Tiscali brand is no longer available in the U.K. market. As the result, TalkTalk TV is replacing the name of Tiscali TV. See Chris Williams, "TalkTalk kills Tiscali," *The Register*, http://www.theregister.co.uk/2010/01/08/tiscali_bye/, accessed on June 29, 2010.
[151] Dan O'Shea, "Tiscali gets 100K U.K. IPTV customers," http://www.fierceiptv.com/story/tiscali-gets-100k-u-k-iptv-customers/2009-04-08#ixzz0sGipIfrW, accessed on June 29, 2010.
[152] Ibid.
[153] BT Vision Launch Presentation, http://www.btplc.com/News/Presentations/BTVision.pdf, accessed on June 29, 2010.
[154] Ofcom, "The Communications Market 2009," http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr09.pdf, accessed on July 28, 2010.

4.4. Introduction to U.K. Copyright Law

The first known recorded copyright case in the U.K. dates back to 567 AD.[155] However, modern copyright law was established in the 1710 Statute of Anne, under which an author's act of composition constituted the existence of copyright.[156] Initially, copyright was intended for literary works only; however, over time copyright law has expanded its protection, especially as international law influences the development of copyright law in the U.K.[157] Since the U.K. joined the European Union, U.K. intellectual property regulations have been altered to act in harmony with European Union directives. Today, the principal statute governing copyright in the U.K. is the Copyright, Designs and Patent Act 1988 (CDPA), which has been changed where necessary to apply European Union Directives as well as national regulations.[158] In addition, the U.K. is also a contracting party of many international conventions on copyright, such as the Berne Convention, the WIPO Copyright Treaty, and the WIPO Performances and Phonograms Treaty.

4.5. Application of U.K. Copyright Law to IPTV copyright issues

Below is a discussion of U.K. law and its responses to IPTV copyright issues. This thesis will not discuss the issue of U.K. law enforcement. A discussion of U.K. law can be used by Indonesian regulators to see how other countries use law to respond to IPTV copyright issues.

4.5.1. Copyright holders of IPTV content

[155] Christine Riefa, "Know your copyright from wrong: A guide to UK Copyright law", http://ssrn.com/abstract=1355904, accessed on June 10, 2010.
[156] HM Treasury, "Gowers Review of Intellectual Property November 2006," http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/d/pbr06_gowers_report_755.pdf, accessed on July 10, 2010.
[157] Currently, intellectual property governance in the U.K. is quite complex, since it combines various UK, European and international regulations. The U.K. is a member of international and European intellectual property governance organizations such as the WIPO and the WTO, as well as the European Community and the European Patent Organization.
[158] The CDPA has been changed several times since its enactment, mostly as implementation of EC Directives such as Directive 93/98/EEC harmonizing the term of protection of copyright and certain related rights (which has been repealed and replaced by Directive 2006/116/EC); Directive 96/9/EC on the legal protection of databases; and Directive 2001/29/EC on the harmonization of certain aspects of copyright and related rights in the information society. See OPSI, "*Copyright*, Rights in Performances, Publication Right, Database right- Unofficial Consolidated Text of UK Legislation to 3 May 2007," www.ipo.gov.uk/cdpact1988.pdf, accessed on July 13, 2010.

a. Suggestion or opinion in interactive content:

In alignment with the Berne Convention, Section 3(2) of the CDPA states that "*Copyright does not subsist in literary, dramatic or musical work unless and until it is recorded in writing or otherwise*."[159] The CDPA protects a variety of works (including original literary, dramatic, musical, and artistic work), but fixation must have occurred for a work to be protected by the CDPA.[160] The CDPA also acknowledges copyrights for derivative works, such as sound recording, films, broadcasts, and typographical arrangements of published editions. If a work does not fit into any of these categories, then the CDPA cannot protect it. Suggestion or opinion in interactive content has too weak a claim on copyright to be protected by the CDPA. First, as previously explained, suggestion or opinion is not intended as copyrighted work. The producer of interactive content does not ask for a completed movie script, but for an emailed suggestion; there is not sufficient fixation for the suggestion to constitute a copyrighted work. Second, even though the suggestion is recorded in writing (in this case, an email), such a work does not fall under the categories of work enumerated by the CDPA. A suggestion through email cannot be construed as a literary work, as it does not appear as a complete work embodied in the form of a screenplay, for example. The viewer participant could not be identified as the author of the screenplay. Third, the suggestion was not guaranteed to be chosen and included as part of the screenplay. Section 9 (2) (ab) of the CDPA stipulates that the author of a film is the producer and the principal director, and the CDPA does not offer provisions for the copyrighting of a suggestion. Therefore, a suggestion through email does not give a participant any royalty rights.

b. UGC:

As previously mentioned, there are two important issues related to UGC: 1) whether content infringes copyright and 2) who owns the content. These two issues are crucial if IPTV businesses are to avoid broadcasting illicit content to subscribers. Section 16(2) of the CDPA explains that "*Copyright in a work is infringed by a person who without the licence of the copyright owner does, or authorises another to do, any of the acts restricted*

[159] Article 2(2) Berne Convention states that "… works shall not be protected unless they have been fixed in some material form."
[160] Section 1(1)(a) of the CDPA.

by the copyright." Although IPTV operators may have license to broadcast the content from UGC creators, the content cannot consist of illicit material; if an operator knows that the UGC contains infringing material and continues to broadcast the content, the operator performs secondary infringement and violates Section 23 of the CDPA.[161] When a work is exhibited or distributed without the license of the copyright owner, which the doer knows or has reason to believe is an infringing copy, the situation constitutes secondary infringement. Intention to broadcast illicit content is key, and lack of knowledge will exonerate the IPTV operator. But once the IPTV operator has identified the illicit material in UGC, it can no longer broadcast the content. IPTV operators can adopt the principles of YouTube's terms of condition in providing UGC to their subscribers.[162]

Although UGC is created by amateurs, it is still copyrighted work; under the CDPA, video UGC could be protected under regulations of derivative work, since it is derivative of copyrighted film works.[163] Moreover, Section 9(2) of the CDPA regulates that in the case of film, the author is the producer and principal director. Therefore, in the case of UGC, the UGC creator is the content's author, since the CDPA defines producer as "*the person by whom the arrangements necessary for making of the sound recording or film are undertaken*".[164]

To obtain the right to broadcast UGC, the CDPA provides two means of transferring rights: assignments and licenses.[165] To reduce future copyright issues, an IPTV operator can ask for an exclusive license from the UGC creator. According to Section 92(1) of the CDPA, an exclusive license allows an IPTV operator to exercise the copyright owner's right to distribute. Exclusive license is often the best solution for an IPTV operator.

4.5.2. Illegal copying and file sharing

[161] Section 23 of the CDPA regulates about secondary infringement which related with possessing or dealing with infringing copy.
[162] YouTube is one of the biggest web hosts providing UGC. However, many of their end users create video with illegal material. Therefore, while YouTube does not guarantee the legality of all material, YouTube provides a Copyright Infringement Notification allowing copyright holders to take down the infringing video. See http://www.youtube.com/t/copyright_notice, accessed on November 2, 2010.
[163] Definition of films, according to Section 5B (1) of the CDPA, is "*a recording on any medium from which a moving image may by any means be produced*."
[164] Section 178 of the CDPA.
[165] Section 90 of the CDPA.

a. Breaking technological measures:

Illegal copying and file sharing is the chief act of copyright infringement of IPTV content, but breaking technological measures is a necessary first step to infringement and constitutes a criminal act in its own right. Like Indonesian Copyright Law, the CDPA prohibits any action that circumvents technological measures, although some exceptions apply.[166] The CDPA defines technological measures as "*any technology, device or component which is designed … to protect a copyright work other than a computer program*".[167] In addition, according to Section 296ZF (2), such measures are only considered "effective" if the copyright owner controls the work which achieves the intended protection. The provision regarding circumvention of technological measures, in Section 296ZA (1) of the CDPA, applies where effective technological measures have been applied and the accused circumvents them knowingly. Therefore, if an individual breaks IPTV technological measures, the infringer could be held liable and the IPTV operator could ask for remedies. However, in contrast to Indonesian copyright law, the CDPA does not mention criminal sanctions for those who directly circumvent technological measures, only for those who provide devices and services designed to circumvent technological measures.[168] This means that an IPTV operator, instead of chasing after individual infringers, can ask for liability of those who provide the means to circumvent technological measures. In addition, Section 96(2) of the CDPA gives copyright holders the opportunity to ask for legal remedies in the form of not only conviction, but also damages, injunction, accounts, or other available remedies.

b. Who should be liable for illegal copying and file sharing?

U.K. copyright law recognizes two types of copyright infringement: primary and secondary infringement. Regarding the former, Section 16 (2) of the CDPA mentions that "*Copyright in a work is infringed by a person who without the licence of the copyright owner does, or authorises another to do, any of the acts restricted by the copyright*". Primary infringement occurs when someone commits acts without authorization from the copyright holder, or exceeds the rights granted by license or assignment. Meanwhile,

[166] A list of permitted acts is available in Schedule 5A of the CDPA.
[167] Section 296ZF (1) of the CDPA.
[168] Section 296ZB (4) of the CDPA.

copying and showing the copyrighted work to the public are acts restricted by copyright law, and lack of license will create a situation of copyright infringement.[169] Therefore, if an IPTV customer or end user directly copies and shares IPTV content without license, then the offender has primary liability, regardless of what others do with the infringing copies of IPTV content.

Under both U.K. and Indonesian law, P2P services and ISPs can be held liable for copyright infringement. Secondary infringement refers to authorization of infringement where there has been an infringement of the primary rights of the copyright owner.[170] Under Section 24(1) of the CDPA, the copyright owner of IPTV content can ask for P2P liability. However, as described in Section 24(1), the infringer must be in the state of "*knowing or having reason to believe that it is to be used to make infringing copies*"; without this knowledge, the ISP escapes liability. In case of IPTV content, it is clear that delivering a service or software to access IPTV content will result in copyright infringement; therefore, in case of exclusive IPTV content, P2P service shall be held liable under Section 24(1) of the CDPA. In addition, if P2P service shares IPTV content in the course of business, then P2P service is also liable for criminal offences under Section 107(2) of the CDPA.

In the latest development of the distribution of digital work, ISPs can also be considered liable for copyright infringement. The debate over ISP liability persists, especially as recent regulation in the Digital Economy Act 2010 (DEA) mandates ISPs to police their customers' activity. Under the DEA, an ISP has new obligations, including obligation to notify subscribers of reported infringements, to provide infringement lists to copyright owners, and to limit internet access.[171] This new act is controversial, as an ISP is given a myriad of obligations and is expected to enforce copyright on behalf of the copyright owner.[172] The DEA is expected to offer a solution, since the CDPA does not

[169] According to Section 17(2) of the CDPA, copying means reproducing the work in any material form, including storing it by electronic means. In addition, Section 17 (4) copying in relation to a film also includes making a photograph of any image forming part of the film. Therefore, infringing IPTV content is not limited to copying the whole film, but also making a photograph of the film.
[170] Hector MacQueen and Dr Charlotte Waelde, "UK Copyright Law in the Digital Environment," http://www.ejcl.org/103/art103-10.pdf, accessed on July 2, 2010.
[171] Section 124A, 124B, and 124H of Communication Act 2003 are new provisions inserted by DEA.
[172] Recently Regulator Ofcom has said that plans to disconnect internet to reduce risk of infringement would not come into force until at least 2012. BBC, "BT and TalkTalk challenge Digital Economy Act," http://www.bbc.co.uk/news/10542400, July 8, 2010.

accommodate the copyright owner's need to rely on ISP liability.[173] Under the DEA, the ISP can no longer escape liability if it lacks knowledge of infringing behavior.[174] DEA also helps copyright owners to enforce their copyright. However, the copyright changes put forth in the DEA leads to another issue: internal conflict within a company. The largest IPTV operators in the U.K., BT Vision and TalkTalk (previously Tiscali TV), belong to a communication and internet service group which also offers internet service.[175] In fact, these two rival companies together applied for judicial review of the DEA.[176] In the case of BT Vision and TalkTalk, an IPTV operator's request for ISP liability would endanger the IPTV provider's own business. Although the DEA enables copyright holder to pursue ISP liability, currently not many of IPTV operator will use that privilege, especially while judicial review of the DEA is still in process.

4.6. Analysis of Indonesian and U.K. Law regarding IPTV Copyright Issues

The issue of identifying the copyright holder of IPTV content is a challenge for IPTV operators looking to avoid copyright violation. Neither U.K. nor Indonesian regulations protect opinion in interactive content (even written opinion) as copyrighted work. Meanwhile, both sets of regulations agree that UGC is protected work and that the creator remains the copyright owner, in spite of the UGC creator's amateur status. Therefore, both regulations require that the IPTV operator obtain licenses in order to broadcast UGC on IPTV service. Moreover, even if IPTV operators have already obtained license to broadcast UGC, they should be aware of the risk of illegal material in UGC; broadcasting this illegal material makes IPTV operators liable for secondary infringement under the CDPA and puts them at risk for imprisonment under Indonesian Copyright Law 2002. On this point, U.K. and Indonesian regulation do not differ significantly; the basic measurements for what constitutes a copyrighted work are the same in the U.K. and Indonesia.

[173] In 2009, the British Phonographic Institute has faced more than a million cases of music copyright infringement to ISPs, but there have been no major results. See Rory Cellan Jones, "File-sharers: Expect a mountain of mail," dot.Rory Blog, comment posted July 21, 2010, http://www.bbc.co.uk/blogs/thereporters/rorycellanjones/2010/07/filesharers_expect_a_mountain.html, accessed August 3, 2010.
[174] According to Section 24(2) of the CDPA, ISPs are liable only if they know or having reason to believe that infringing copies of work will be made.
[175] BT Vision is a part of BT group, which also acts as an ISP, as does TalkTalk TV in a division of the TalkTalk group.
[176] BBC, "BT and TalkTalk challenge Digital Economy Act," http://www.bbc.co.uk/news/10542400.

The difference between Indonesian and U.K. regulation can be seen in how the regulations respond on the issue of liability for copyright infringement. Indonesian Copyright Law 2002 does not offer a straightforward definition of copyright infringement; the law's definition of infringement can be found in its enumeration of criminal provisions. In contrast, the CDPA provides more details about the definition of copyright infringement, and criminal sanction is not the only remedy. The CDPA divides infringement into two types, primary and secondary infringement, a distinction which provides coherent protection to digital works like IPTV content. The CDPA provides clear guidance in differentiating types of copyright infringement (which is of great help to copyright holders enforce their rights); the act could offer strong guidance to the Indonesian regulator looking to revise the country's existing copyright law. Indonesian Copyright Law should define clearly what constitutes infringement and should not rely solely on criminal provision, especially when the copyright holder prefers civil remedies over criminal sanctions against the alleged infringer. Indonesian copyright law could also model itself after the CDPA by adding a provision allowing copyright owners to sue infringers who provide tools to circumvent technological measures. This would offer another solution for the copyright holder in Indonesia, since asking for liability from the provider of circumvention tools is more effective and practical then chasing after individual infringers.

Although the CDPA offers additional value for Indonesian's Copyright Law, the Act still has its drawbacks. The issue of liability for illegal copying and file sharing of IPTV content is not straightforward. Both regulations agree that the direct infringer or user end who directly copies and/or shares the exclusive IPTV content is liable for copyright infringement. In addition, both regulations enable copyright holders to ask for P2P service liability. Unfortunately, chasing after individual infringers is not a practical solution. As explained in Chapter 2, most IPTV content remains the same as cable television content. If the very same content is available in P2P service, it will be difficult to trace the source of the content. Therefore, even when both laws provide alternatives for the copyright holder to address liability to P2P service, at the moment such provisions prove useless. Unless content is completely unique and exclusively made for IPTV service, then requests for P2P liability are a strong alternative.

Following the new copyright law trend of secondary ISP liability, the U.K. has introduced the DEA, enacted to allow copyright owners to demand ISP assistance in policing customers. However, as previously explained, the two biggest IPTV providers in the U.K. (BT Vision and TalkTalk) are also ISPs and cannot therefore enforce ISP liability, especially as the two companies have collectively applied for judicial review of the DEA. In addition, ISP liability raises concerns about privacy and restriction of freedom of expression, which will lessen the value of the DEA as a source of copyright enforcement.

Indonesian regulators have drawn up a bill similar to the DEA (the Regulation of Minister of Communication and Information regarding Handling Procedure of Report or Complaint of Internet Content). Such a bill will likely create internal problems for IPTV operators operating as ISPs in Indonesia. If we are to learn from the effects of the DEA in the U.K., we can conclude that the similar Indonesian regulation will not much benefit the Indonesian IPTV industry. Relying on third party liability is not the best way to prevent IPTV copyright infringement; the ISP should not be burdened with the heavy responsibility of policing copyright.

In terms of procedure law, the CDPA provides several types of remedies that are not available in Indonesian Copyright Law 2002. Other remedies, such as an injunction against service providers, an order for delivery up, or a seizure of infringing copies, are available under Chapter VI of the CDPA. In addition, the U.K. has implemented Directive 2004/48/EC on the enforcement of intellectual property rights (Enforcement Directive), intended to set up minimum requirements in the way of precautionary and corrective measures, procedures, and remedies ensuring enforcement of intellectual property rights.[177] Some of these measures are not regulated in detail in Indonesian law but are nonetheless essentially the same as those in U.K. regulations. However, certain highly effective measures are not available under Indonesian law. For example, Article 9(2) of the Enforcement Directive allows for the order of a precautionary seizure of infringer's property, including the blocking of his/her bank

[177] Application of the Enforcement Directive in the U.K. is dependent on court rules, civil procedures, and common law, rather than intellectual property law. In England and Wales, the Enforcement Directive has been implemented by the Intellectual Property Regulation 2006 and has changed certain provisions in Civil Procedure Rules and Practice Direction (CPR). In Scotland, measures and remedies have been implemented in statute and Scottish common law, while procedures are regulated by the Scottish Court rules. See The Patent Office, "The UK implementation of the directive on the enforcement of intellectual property rights (2004/48/EC)," http://www.ipo.gov.uk/consult-enforcement.pdf, December 22, 2010.

account and other assets.[178] Indonesia's adoption of such a provision could be an effective way to prevent infringement, because seizure of property can deter an infringer. At the moment, order to seizure of property and bank account blocking is only available in Indonesian law in the case of financial crimes, such as corruption and money laundering. Indonesia would do well to expand this provision, in order to improve law enforcement and to increase respect for intellectual property.

[178] Such a provision has been applied in the U.K. In England and Wales, CPR Rule 25.1(1)(g) permits the court to make an order restraining a party from removing assets from the jurisdiction or restraining a party from dealing with assets located in the jurisdiction. This might include freezing monies held in a bank account.

Chapter 5: Conclusion

Protection of IPTV content can occur principally through law, which can address issues having to do with the ownership of IPTV content. Both Indonesian regulations and U.K. regulations take similar stances on what constitutes a copyrighted work, stating that an opinion in interactive content is not a work while UGC is. However, neither law can satisfactorily overcome illegal copying and file sharing of IPTV content, nor can the existing laws determine who is liable for copying and sharing of IPTV content. The Indonesian Copyright Law 2002 cannot give practical guidance for copyright owners looking to enforce their rights, because it fails to provide a simple definition of copyright infringement. Furthermore, instead of helping the IPTV industry protect its content, the Minister Regulation No. 11/2010 obliges IPTV operators to make their own arrangements for copyright protection. The Copyright Law 2002 and Minister Regulation No. 11/2010 do not provide clear solutions for copyright protection issues, which places a burden on the IPTV operator.

Even the U.K., which has approximately ten years' experience with IPTV and hundreds of years of copyright law development, cannot point to law as the best and only answer to protect IPTV from copyright threats. The U.K. might indicate a trend of using an ISP as copyright police, but such a policy will not benefit the IPTV-ISP industry and will not be an effective policy to implement in Indonesia. Meanwhile, chasing after individual direct infringers or end users costs time and money and is not the best solution. If an IPTV operator offers the same content as cable television or other pay television services, it cannot then ask for P2P liability, since the illegal content can come from the other service. Therefore, regulations alone are not an effective means of protecting IPTV from copyright threats. IPTV operators in Indonesia should not depend fully on law to protect their content because of Indonesian law's many flaws. In addition, ineffective law enforcement in Indonesia will push copyright owners to find other solutions if they do not want to combat corruption at every step of the judicial process. Indonesian copyright law may offer solutions to certain IPTV-service copyright issues, but these solutions will be meaningless if the copyright owner has the burden of paying extra in exchange for fair law enforcement.

Since protection through law may not be completely sufficient, other constraints (as outlined in Lessig's theory of Modalities of Regulation) should be enforced in tandem. To protect

IPTV content from illegal copying and file sharing, IPTV operator should combine market, technology, and social norms in one cohesive protection. IPTV operators must also recognize that illegal copy and file sharing is unstoppable and that it is perhaps better to provide free content to be shared. As explained in Chapter 3, protection through the market will enable superdistribution which allows users to enjoy IPTV content and to share some content with others. This policy acts as a market check on illegal sharing: the subscriber is given the opportunity to share without breaking copyright. However, this superdistribution should be combined with sufficient technological constraint in order to prevent unauthorized action. IPTV content is broadcast for viewing only; the superdistribution model allows for sharing but not copying.

In addition to market and technology, social norms must play an important part in providing complete protection. As previously mentioned, Indonesia has been on the USTR watch list since 1989 and until now has shown no signs of improvement. There is little awareness of copyright in Indonesia, which has been a cause for concern in international forums. Therefore, the adjustment of social norms through education and persuasive advertising could be very useful, though instant results are not guaranteed. However, social norm enforcement needs the support of other copyright holders and of the government. Responsibility for raising awareness of copyright does not belong solely to the IPTV industry, but should be the concern of the Indonesian government as well. Finally, though IPTV service struggles with copyright issues these issues should not prevent IPTV operators from launching their services in Indonesia if all four of Lessig’s constraints are addressed.

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