

Standing Committee on Copyright and Related Rights

Twenty-First Session

Geneva, November 8 to 12, 2010

Analytical Document on the Study on the Socioeconomic Dimension
of the Unauthorized Use of Signals, Parts I, II and III

prepared by the Secretariat

I. Introduction

1. At its twentieth session which took place from June 21 to 24, 2010, the Standing Committee on Copyright and Related Rights (SCCR) requested the Secretariat to present at its subsequent meeting an analytical document outlining the main conclusions of the study on the *Socioeconomic Dimension of the Unauthorized Use of Signals* (“the Study”). The present document is prepared in response to that request and is based on the following three parts of the Study which have been commissioned by the WIPO Secretariat:
 - Study on “the Socioeconomic Dimension of the Unauthorized Use of Signals” (Part I) (document SCCR/19/12): *Current Market and Technology Trends in the Broadcasting Sector*, prepared by Screen Digest (referred to as “SDI” in this document);
 - Study on “the Socioeconomic Dimension of the Unauthorized Use of Signals” (Part II) (document SCCR/20/2): *Unauthorized Access to Broadcast Content – Cause and Effects: A Global Overview*, prepared by Screen Digest (referred to as “SDII”);
 - Study on “the Socioeconomic Dimension of the Unauthorized Use of Signals” (Part III) (document SCCR/21/2): *Social and Economic Effects of the Proposed Treaty on the Protection of Broadcasting Organizations*, prepared by Professor Robert G. Picard, Ph.D., Principal Investigator, Media Management and Transformation Centre, Jönköping International Business School, Sweden; Professor Guy Berger, Ph.D., School of Journalism and Media Studies, Rhodes University, Johannesburg, South Africa; Fernand P. Alberto, LL.B., M.B.A., Broadcast Media Consultant, Manila, Philippines (referred to as the “Picard Study”).
2. The present document presents a synthesis of the main findings and conclusions of the above-mentioned three parts of the Study. The statements expressed are not intended to represent the views of the Secretariat or Member States of WIPO.

II. The Global Television Infrastructure

3. The three parts of the Study address developments taking place in the global broadcasting market place in an era of unprecedented expansion and challenges, such as platform developments, mushrooming of on-demand interactive services and the development of pay-TV services. Today broadcasters can choose between analogue terrestrial, cable and satellite, digital terrestrial, digital cable, digital satellite cable and IPTV which are the main platforms used for distributing TV signals.
4. SD I provides a detailed overview of technological trends and an overview of the main platforms available on the market. Overall, it shows that developed markets exhibit a higher degree of service availability than developing regions.

5. The main findings are the following:
- TV set ownership is lower in developing markets. While developed markets have a near 100 per cent household ownership rate of TV sets, developing markets across the world have, on average, 85 per cent household ownership of TV sets. In markets such as the Sub-Saharan Africa, these rates are considerably lower, at between 10 and 50 per cent. In such territories, community TV set availability, such as a shared TV set or a public house TV subscription is important in providing television access to consumers;
 - The global TV market can be divided between pay-TV and free-TV households. There are significant regional differences, however, in the breakdown of free and pay-TV reception. Pay-TV services require a monthly subscription. It can be distributed via terrestrial, cable, satellite and IPTV. Clear differences exist between developed and developing countries in the development of the pay-TV market;
 - Multi-channel and pay-TV availability is lower in developing countries, resulting in lower exposure to non-public service channels and premium content. Although pay-TV is rapidly expanding across both developed and developing markets, developed countries still have, on average, a 50 per cent higher pay-TV penetration than developing markets, with the contrast being most noticeable between the North American territories of the US and Canada (91 per cent penetration) and the Southern and Central America (27 per cent penetration) and Africa and the Middle-East (8 per cent penetration). A strong free-to-air satellite market is largely responsible for the low levels of pay-TV in Africa and the Middle East;
 - Digital terrestrial roll-out is much more advanced in developed territories, with many developed nations having already switched off. Many developing markets, despite having high household reliance on free analogue terrestrial, have yet to even commence digital terrestrial roll-out. By 2012, the majority of developed nations will have transitioned entirely to digital terrestrial;
 - Cable TV is available in the majority of markets across the world, with very few countries having no cable at all, but wire is extremely expensive and necessitates vast quantities of up-front capital expenditure. Cable TV penetration is normally higher in developed countries. The regions with lowest cable TV usage are South and Central America, the Middle-East and Africa. Analogue cable is still prevalent in developing markets but cable services are moving towards digital encoding (DVB C) of their signals which allow broadband Internet and telephony to be delivered via cable. Cable digitization is in a range of stages across the world. Technology required for digital services, such as set-top boxes, has become more affordable for smaller operators and those in markets with lower per-customer revenues. This has allowed some Middle East, Eastern European, Asian and South American cable companies to start digitizing their cable platforms, the leading market being the United States;
 - Broadband growth has been very rapid in developed markets in recent years. Broadband acts as an access enabler for digital distribution of on-demand video services and Internet TV services. Broadcasting organizations in developing markets have not yet tapped the potential of the on line environment. Advanced

television services such as video-on-demand are also much more available in developed regions than developing markets;

- On-demand systems come in a variety of forms, with on-demand content available via mobile, computers and also via TV services. It allows the customer to start viewing the content at any time as well as to pause. Across the world video-on-demand (VOD) is approaching 100 million households having access to an on-demand service by the pay-TV provider. Close to a quarter of households in developed markets are enabled with a true video-on-demand system, with the availability in developing regions at just 3 per cent of TV households. In Asia, however, under five per cent of TV households can currently use true video-on-demand content, with the proportion at less than 1 per cent in South and Central America;
- IPTV has been developing with telecommunications operators rolling out their own TV services mainly, pay-TV delivered via their telephony and broadband networks. Asia has been a favourable market to IPTV. IPTV launched first in Europe, but is largely less developed in Eastern and Central Europe. It has developed in some advanced Asian markets but to a lesser extent than in the South and Central American region, which have legislation in place that prevents the major telecoms firms from rolling out linear IPTV via their telephony infrastructure;
- Services relying less on fixed infrastructure (such as wire) are more available and apparent in developing markets. Mobile broadband and satellite TV are two of the areas in which many developing markets are seeing rapid growth. Mobile TV is the most rapidly growing telecoms/media service in Africa essentially for economic reasons;
- Television is now the biggest media in terms of advertising revenues in most regions of the world, outgrowing the press. The TV advertising market is likely to show most significant growth in developing regions.

III. Unauthorized Access to Broadcast Content

Unauthorized signal uses: Types

6. According to the Picard Study, the convergence of information and communication technologies has widened opportunities and possibilities for unauthorized use of broadcasts. Increased broadband penetration has significantly facilitated signal piracy through online retransmissions. Noting that the core function of the proposed treaty is to restrict uses of signals that are not authorized by broadcasters, SDII and the Picard Study describe the broad range of unauthorized signal uses in practice which can be made by individuals or commercial entities, for commercial and non-commercial purposes.
7. Specific unauthorized acts in relation to the environments in which signals are distributed are identified in the Picard Study whereas SDII provides for a more generic and comprehensive typology of the various forms of unauthorized uses. Both reports show that the methods of unauthorized access of broadcast signals are changing as the industry undergoes digitization. The prevalence of forms of piracy varies to a large extent, depending on the level of economic development of countries and the broadcasting infrastructure of affected countries.

8. The most common forms of unauthorized uses identified by SDII are:
 - (a) Physical piracy: unauthorized access and use of broadcast content on formats such as VHS tapes, VCD, DVD or even more recently USB sticks.
 - (b) Hardware-based unauthorized access, facilitated through the use of specific equipment that enables the circumvention of security measures put in place by rights owners and content distributors which take the form of set-top box, based smart card or integral conditional access systems.¹
 - (c) Unauthorized re-broadcasting of signals, involving redistribution of broadcast signals without the express consent or knowledge of the rights holder is almost always carried out on a commercial basis.
 - (d) Extra-territorial TV access or signal overspill into neighbouring countries. Extra-territorial TV access (often referred to as the 'grey market') refers to the reception of signals (satellite/terrestrial) outside their intended coverage area. This form of piracy has been spurred by satellite pay-TV services.
9. The Picard Study's typology considers that in the terrestrial broadcast and satellite broadcast environment five types of unauthorized uses primarily occur: unauthorized reception, unauthorized decryption, unauthorized retransmission, unauthorized fixation, and unauthorized post-fixation use. In the cable environment, the primary types of unauthorized uses include unauthorized connection, unauthorized decryption and unauthorized retransmission. This typology highlights that unauthorized uses of signals taking place in the broadcasting environment also take place in relation to post-fixation uses (including reproduction and distribution).
10. SDII and the Picard Study assess the impact of unauthorized uses and identify some enablers of piracy while stating that reasons for unauthorized use are wide and often interlinked but are driven by:
 - The cost of access to broadcast services is one of the most cited reasons for unauthorized access to broadcast signal/content piracy on an individual level in almost all markets which have been surveyed. Markets where top level access fees as a proportion of monthly per capita GDP were high, or where income inequality is high, tend to witness higher levels of unauthorized access and piracy;
 - Exclusivity practices for premium content, the most expensive and most often pirated, have largely contributed to increase access costs which are exacerbated by the fierce competition between broadcasting operators and platforms. In the cases of pay television, the broadcaster passes the costs to consumers. In the absence of alternative legitimate services at affordable price consumers are driven to access illegal websites;

¹ Set top boxes (STB). A cable set-top box is an analogue or digital receiver and decoder that convert the signal received to one suitable for a standard television set. Set-top boxes are widely used in digital terrestrial, cable, satellite and IP television. Conditional access systems (CAS) are the encryption and control systems used to protect delivered content from being decoded outside of the authorized network of STBs.

- The non-availability or delayed availability of content in certain markets can be cited as reasons for unauthorized access of broadcast signals and piracy. Non-availability often occurs as a result of the windowing strategy adopted by broadcasting organizations and film studios when releasing their content into different markets.
- Regulations governing the availability of content, such as censorship resulting in the non-availability of broadcast content/TV shows can also drive to unauthorized access, create conditions ripe for piracy.

Unauthorized Signal Uses: Effects

11. The effects of unauthorized uses are addressed by SDII and the Picard Study, Picard Study providing a more detailed analysis focusing on how and why unauthorized uses affect current operations, investment decisions, and profitability of broadcasters. The Picard Study discusses the economics of broadcasting, pricing issues and the relationship of unauthorized uses to costs, revenue, investment and profit. It also states that the economic effects of unauthorized uses differ, depending upon the type of broadcasts or cablecasts involved and the uses made.
12. Broadcasting is considered as a public good. In order to operate, broadcasters and cablecasters must make basic investments in facilities, equipment, and programming and these are relatively fixed. These are compounded by high 'first copy costs' for programming. Unauthorized uses of copyrightable products affect recovery of marginal costs, average costs of authorized products available for sale, consumer demand, and company revenue. Four fundamental conditions must then be considered in determining the economic effects of unauthorized use: is the use *within* or *external* to the intended market of the signal, and does the use involve *free-to-air* or *paid* broadcast signals.
13. Broadcasting organizations differ in terms of their funding/revenue models. Consequently, the economic effects of unauthorized uses may also have a different negative impact, depending on whether free-to-air or paid signals are involved. Public service broadcasters that rely on advertising can also be commercially affected by signal piracy in so far as it leads to audience fragmentation, falling viewership ratings, and thus reduced advertising, but the Picard Study concludes that unauthorized uses are not generating the same level of economic losses and do not present the same level of harm to broadcasting organizations. The economic effects of piracy differ, depending upon the type of broadcasts or cablecasts involved and the uses made.
14. Unauthorized uses impact on investment decisions which affects willingness to make additional investments in existing enterprises, including investments in technologies and premium programming which is expensive and often funded by the sale of rights to broadcasting organizations/channel operators who, in turn, depend on either advertising or subscription revenues; such effects can particularly be felt in states where the industry is in the early stages of development and growth. Higher levels of unauthorized use among the potential customers are likely to lead broadcasting organizations to reduce or constrain initial investments.
15. Unauthorized uses reduce audience sizes of customers willing to pay. This consequently affects advertising and potential revenues stemming from sub-licensing, syndication, and license fees, both for commercial and free-to-air broadcasting. The

potential for achieving profitability-return is reduced if significant levels of unauthorized use are present.

IV. Socioeconomic Impact of Broadcasting and Effects of the Proposed Treaty

16. Broadcasting serves public and private needs. Socioeconomic public objectives surrounding broadcasting are complex and generally involve a wide array of objectives. The Picard Study states that the impact of the proposed treaty on social welfare must be measured in relation to the following central issues:
 - Effects on development and strengthening of domestic media and capacity to invest in domestic programming and infrastructure;
 - Effects on consumers in terms of availability, access and costs of information, channels and services;
 - Effects on states in relation to additional expenditures to ensure enforcement;
 - Effects on national economies in encouraging wealth creation and economic growth.
17. The Picard Study addresses the rationale of the proposed treaty and the differences between unauthorized reception, unauthorized decryption, unauthorized retransmission, unauthorized fixation and post fixation uses. The Picard Study explores the effects of the proposed treaty on various stakeholders, within the framework of policy objectives aimed at protecting against piracy, promoting growth and competitiveness, providing public access to information and content, encouraging creativity, enhancing competition, facilitating political participation, and supporting development.
18. The Picard Study identifies stakeholders and their interests relative to copyright, investigates the extent to which the interests of stakeholders will be affected by provisions of the proposed treaty, and looks at the social benefits that the treaty would bring. The assessment shows that:
 - Broadcasting organizations would gain explicit and additional protection for their signals that is not included in any existing treaty. However, broadcasting organizations would be disadvantaged as the proposed instrument excludes activities such as webcasting which are increasingly becoming parts of broadcasting operations worldwide;
 - Authors and performers, production firms, and rights holders/licensors will benefit from the updated protection of the broadcast signal. It does not interfere with existing rights and limitations/exclusions benefiting these stakeholders. It provides some protection against potential abuse of intellectual property rights that can hinder creativity. The treaty is also likely to reduce private enforcement costs by somewhat simplifying and clarifying issues in legal proceedings;
 - Rights provided under the treaty could allow broadcasting organizations to control access and use of the signals and content transmitted through the signal. For audiences and consumers the treaty provides no direct benefits, but by boosting the market power of broadcasting organizations, it could increase their monopoly over content provision and the potential for price effects harmful to consumers;

- The proposed treaty will benefit the economies and increase tax receipts of home nations of broadcaster/cable/satellite operators who obtain additional revenue through exploitation of the rights provided, while creating further burden for states to ensure effective enforcement measures.

19. None of the reports provides a detailed assessment of the overall effects of the proposed treaty and how the instrument would impact on countries. The extent to which the instrument may affect incentives for investment, alter prices and access to content, or increase countries' wealth, will vary widely. The available data did not allow the authors to forecast with accuracy the economic and social effects of the treaty. The studies point out the current uncertainty about the overall scope of the treaty, and the extent and scale of losses due to unauthorized uses. Similarly, it was not possible to project revenues from the potential new authorized uses, due to the effects of conflicting national policies and degrees of enforcement. The Picard Study indicates, however, that:

- The new treaty is likely to provide some positive benefits in terms of revenue for broadcasting organizations, wealth generation and tax benefits for states, and some additional protection for existing investments in programming;
- Primary benefits of the treaty would accrue to broadcasting organizations and cable and satellite operators;
- Large international broadcasting organizations, and broadcasting organizations disseminating sporting events, movies and musical programs would be the greatest beneficiaries;
- Authors and performers, production firms, and right holders/licensers would benefit through enforcement of signal protection that adds additional protection to their rights;
- Domestic broadcasting organizations' distribution systems and tax receipts will benefit, but to a degree that cannot be projected;
- Interests of audiences/consumers/users and society are protected only to the extent that contracting parties have or put in place legislation and regulatory measures that protect their interests;
- The greatest financial benefits will occur in upper middle and high income states where the most valuable content is currently generated and controlled, and some mid-term benefits should result from activity to protect signals to middle income countries, which are experiencing growth of all forms of broadcasting and in pay services;
- Audiences/consumers/users and society will be somewhat disadvantaged by reduced access to some content, particularly in low and lower middle income states;
- The proposed treaty as currently constituted will accomplish its stated purposes without creating undue social harm, provided contracting states have in place appropriate policies and legislation to protect public interests as permitted under the treaty and other WIPO treaties;

- There is a need to weigh the interests of right holders with the interest in public access through a limited signal protection regime coupled to a transparent regime of exceptions and limitations.

20. The Picard Study ultimately explores alternative measures for protecting broadcasting organizations and pursuing the proposed treaty objectives. The practice of the listed events or anti-siphoning rules has ensured universal availability of sports and major national events and contributed to lower piracy of such content. The promotion of effective rapid enforcement and legal remedies through contracts is also considered, although it would need to be weighed against the challenges of unauthorized cross border uses.

[End of document]