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A REVIEW OF STATISTICAL INFORMATION ON COUNTERFEITING AND PIRACY

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* The views expressed in this document are those of the author and not necessarily those of the Secretariat or of the Member States of WIPO

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INTRODUCTION

TERMS OF REFERENCE

1. The objective of this study is to review the availability of different sources of statistical information on goods where trademark counterfeiting or copyright piracy is suspected, and assess particular aspects of their nature and quality. The purpose of the study is to inform the “IP policy community” about the type of information that is available; to provide an assessment of its reliability and international comparability and to identify major gaps in information in relation to the needs of stakeholders and policymakers. It is hoped that it will provide a useful high level guide for policymakers, particularly in developing countries, who wish to use or collect such data.
2. The terms of reference suggest the following types of data should be reviewed:
 - Customs data on international trade in counterfeit and pirated goods
 - Information generated through domestic law enforcement activity
 - Industry data and surveys
 - Information on illegal copying on the Internet
 - Academic surveys.
3. In essence there are three main sources of data on counterfeiting and piracy:
 - **Governments** - based on movements across the border or domestic crime records
 - **Industry** firms or associations - based on their own or commissioned data collection and research
 - **Independent studies** by academic institutions or international organizations.
4. Accordingly this study will be based on an analysis of these three groups of data sources.

SCOPE

5. There has already been considerable discussion of issues which relate to the topic considered here. In particular the last Advisory Committee on Enforcement (ACE) considered a number of papers which deal with the economic impact of counterfeiting and piracy. Inevitably some of these papers consider also the adequacy of the statistical base from which estimates of economic impact may be derived. Thus there will be some overlap between the papers discussed in the last meeting of the ACE and this paper. In order to reduce the possibility of duplication we define “statistics” as an estimate of the amount or proportion of products that are counterfeited or pirated. Thus an estimate of the number of films pirated is a “statistic” for our purposes, but an estimate of lost revenue or sales derived from it is not. In some cases there can be a quite elaborate methodology required to arrive at the “statistic” in which case a discussion of this methodology is necessary to assess quality and reliability.

DIVERSITY IN NATIONAL LAW AND ENFORCEMENT REGIMES

6. A feature of intellectual property rights is that they are territorial – each country is free to make its own laws consistent with any relevant international agreements it has signed, such as the TRIPS¹ agreement. This creates a problem for those wishing to collect and compare international data on issues such as counterfeiting and piracy. An action which constitutes a crime or infringement in one country may not do so in another. Even if laws are similar, differences in national methods of enforcement and in judicial practice may result in quite different outcomes in different countries for essentially the same activity. A survey undertaken by the International Trademark Association in the European Union found that it “is clear that there is no harmonized definition of trademark counterfeiting (aside from the definition of counterfeit goods in Customs Regulation 1383/2003) or even of what constitutes criminal trademark infringement.” Responses to the survey “underscored the inconsistency in criminal enforcement of trademark counterfeiting and copyright piracy laws within Member States.”² Similarly, the laws and practice relating to internet piracy are in a state of evolution and national regimes do and will differ very considerably.

7. Closely linked to inconsistencies in national laws and enforcement regimes, there is an absence of consistent and agreed international definitions. In principle the TRIPS agreement could provide such agreed definitions (See Box 1).

BOX 1

TRIPS Definition of Counterfeit Trademark Goods

In Article 51 TRIPS provides a narrow definition of “trademark counterfeit goods” referring to “goods, including packaging, bearing without authorization a trademark which is identical to the trademark validly registered in respect of such goods, or which cannot be distinguished in its essential aspects from such a trademark, and which thereby infringes the rights of the owner of the trademark in question under the law of the country of importation”.

Similarly “pirated copyright goods” are defined as “any goods which are copies made without the consent of the right holder or person duly authorized by the right holder in the country of production and which are made directly or indirectly from an article where the making of that copy would have constituted an infringement of a copyright or a related right under the law of the country of importation.”

TRIPS also lays down, in Article 61, that members must “provide for criminal procedures and penalties to be applied at least in cases of wilful trademark counterfeiting or copyright piracy on a commercial scale.”³

8. However in policy discourse the word counterfeit is often used much more broadly than in TRIPS. An OECD study, discussed further below, explicitly defined counterfeiting to include infringements of trademarks, copyrights, patents and design rights.⁴ Until recently the EU entitled its annual report on customs detentions for infringing intellectual property rights (including patents, geographical indications and other rights) “Report on Community Customs Activities on Counterfeit and Piracy”.⁵ In medicines the situation is even more complicated and

¹ *Agreement on Trade-Related Aspects of Intellectual Property Rights*

² *Criminal Prosecution of Counterfeiting and Piracy in Member States of the European Union* INTA February 2010 <http://www.inta.org/Advocacy/Documents/INTAEUCriminalSanctions20082009.pdf>

³ *TRIPS Agreement* http://www.wto.org/english/docs_e/legal_e/27-trips.pdf

⁴ *OECD The Economic Impact of Counterfeiting and Piracy Paris, 2008* <http://browse.oecdbookshop.org/oecd/pdfs/browseit/9208041E.PDF>

⁵ See the report for 2007

has led to unresolved disputes in the World Health Organization (WHO) about rival definitions of counterfeit medicines, including that developed by WHO in 1992: “A counterfeit medicine is one which is deliberately and fraudulently mislabeled with respect to identity and/or source”.⁶ This definition captures medicines that do not infringe trademarks, but may simply misrepresent themselves as regards source or identity (e.g. claim to be manufactured where they were not). A WHO survey in 2010 illustrated the extreme diversity in national law relating to “counterfeit medicines” – only in a small minority of countries did the definition correspond with that of counterfeit trademark goods in TRIPS.⁷

9. So this diversity in law and enforcement regimes is one factor militating against the generation of internationally comparable statistics on counterfeiting and piracy from data provided by government sources.

NATURE OF COUNTERFEITING AND PIRACY

10. It perhaps goes without saying that because these are crimes which go undetected by enforcement authorities to a greater or lesser extent, collecting statistics on their prevalence is a challenge. Moreover, this is the kind of crime that means the consumer of the product is very unlikely to report it to the authorities. Thus obtaining reliable statistics on prevalence is never going to be easy – and inference from proxy indicators likely to be necessary.

GOVERNMENT SOURCES

CUSTOMS DATA

11. It has been difficult to identify a great number of customs authorities that publish annual data on seizures relating to counterfeiting and piracy. The relatively few national compilations of such data identified are examined below. Because both the European Commission (Taxation and Customs Union Directorate-General) and the US Department of Homeland Security (Customs and Border Protection) produce the most detailed annual statistics in this area, the main discussion below relates to these two sources.

The European Commission (EC)

12. The EC (Directorate General for Taxations and Customs Union) produces an annual report on the customs enforcement of intellectual property rights. There are online records going back to 2000 although the format has changed over time.⁸ The 2010 report⁹ includes data on the following indicators:

- Applications by right holders requesting customs to take action against potentially infringing goods
- Number of cases

[Footnote continued from previous page]

http://ec.europa.eu/taxation_customs/resources/documents/customs/customs_controls/counterfeit_piracy/statistics2007.pdf

⁶ <http://www.who.int/medicines/services/counterfeit/overview/en/>

⁷ WHO Preliminary Draft Survey on National Legislation on “Counterfeit Medicines” May 2010

http://www.who.int/medicines/services/counterfeit/WHO_ACM_Report.pdf

⁸ http://ec.europa.eu/taxation_customs/customs/customs_controls/counterfeit_piracy/statistics/index_en.htm

⁹

http://ec.europa.eu/taxation_customs/resources/documents/customs/customs_controls/counterfeit_piracy/statistics/statistics_2010.pdf

- Number of articles (units vary considerably between product categories)
- Value of articles (new in 2010 and based on estimates of retail price of genuine article)
- Country of origin of detained products
- Means of transport (air, express, post, rail, road, sea)
- IP rights potentially infringed (trademark, copyright, design, patent, geographical indications, plant variety rights)
- Type of Intervention (by application from rightholder or ex-officio by customs)
- Action taken (e.g. destruction, court case initiated).
- Procedure used (e.g. for imports, or in transit goods).

13. The above data are broken down in various ways by EU member state and product category. Detailed tables are provided in annexes as follows:

- Overview of cases and articles per Member State
- Breakdown of number of registered cases, number of detained articles and the retail value per product sector
- Overview per product sector of countries of provenance according to % in articles
- Overview passenger traffic
- Means of transport in relation to number of cases, articles and retail value
- Overview means of transport
- Overview postal traffic.

The United States

14. The United States Department of Homeland Security (Customs and Border Protection - CBP) produces a similar set of annual statistics (by fiscal year) available online back to 2003. From 2003 to 2008 these are entitled "Top IPR Seizures"¹⁰ and from 2008 to 2010 "IPR Seizure Statistics".¹¹ Coverage in the 2010 report includes:

- Number of seizures
- Value of seizures (both "domestic value" at the port and manufacturer's suggested retail price - "MSRP")
- A ten year series of seizure numbers and domestic value
- Categories of product seized by domestic value
- Consumer safety and critical technologies (e.g. cigarettes, pharmaceuticals and critical technology components)
- Source countries by domestic value
- Mode of transport (express, mail and cargo).

¹⁰

http://www.cbp.gov/xp/cgov/trade/priority_trade/ipr/pubs/seizure/trading

¹¹

http://www.cbp.gov/xp/cgov/trade/priority_trade/ipr/pubs/seizure

15. The text, in powerpoint format, also includes additional information on particular seizures or trends (e.g. in 2010 Jordan was third highest source by value due to several high-value cigarette seizures). Detailed tables include:

- Number of seizures and domestic value (2001-10)
- Mode of transport by number of seizures and domestic value (2007- 10)
- Commodity breakdown by number of seizures and domestic value (2009-10)
- Consumer safety and critical technologies by number of seizures and domestic value (2009-10)
- Source country by number of seizures and domestic value (2009 – 10)
- Top five source countries – commodity breakdown by domestic value (2010)
- Top three source countries – commodity breakdown by number of seizures (2010)
- Estimated domestic value and MSRP by commodity (2010)
- Estimated domestic value and MSRP for commercial and non-commercial seizures by commodity (2010)
- Estimated domestic value and MSRP for commercial and non-commercial seizures by mode of transport (2010).

Japan

16. Japan publishes similar annual statistics in Japanese.¹² However there is an English language report in 2009 which provides a set of data relating to 2004-2008.¹³ This report includes the following tables:

- Number of “import suspensions” by number of cases and pieces
- Number of suspensions by type of rights (i.e. patent, copyright etc)
- Number of suspensions by type of commodity
- Number of suspensions by case and by item by source country
- Number of suspensions by mode of import (i.e. general cargo or post)
- Number of valid applications for suspension (as of January 2009)
- Total value of suspensions by source country (2008).

Switzerland

17. Switzerland also publishes annual brief statistics on counterfeiting and piracy.¹⁴ Tables in the 2010 edition¹⁵ include:

- Number of interventions and value (of original article)
- Interventions by product group
- Source of goods by country

¹² http://www.mof.go.jp/customs_tariff/trade/safe_society/chiteki

¹³ *IPR Protection: The Role of Japan Customs: Report on IPR Enforcement in 2009* Ministry of Finance
http://www.customs.go.jp/mizugiwa/chiteki/pages/ipr_p.pdf

¹⁴ <http://www.stop-piracy.ch/en/candp/cap20.shtm>

¹⁵ https://www.ige.ch/fileadmin/user_upload/Juristische_Infos/e/Counterfeiting_and_piracy_2010.pdf

- Tourist traffic by product, origin and customs office.

Developing Countries

18. It was difficult to identify equivalent series to the few identified above in developing countries. China has published some statistics for 1996-2005 but more recent figures have not been identified.¹⁶ Dubai has published some basic data for 2009.¹⁷

World Customs Organization

19. The World Customs Organization has published an annual “Customs and IPR Report” since 2004. However, only the reports for 2010 and 2008 are featured on the relevant website page.¹⁸ These reports, however, are only summaries of more detailed reports accessible only to WCO members and enforcement agencies which are not published. The 2010 report¹⁹ is a compilation of statistics provided by 70 out of 177 WCO Members. The 2008 report²⁰ was based on returns from 66 Members. The full list of Members reporting is not provided although tables selectively mention individual countries. Information provided in the 2010 report (and including comparisons with 2009) includes:

- Number of seizures and items seized by region
- Top ten reporting countries by number of seizures and seized items
- Top ten product categories by estimated retail value
- Top ten counterfeit brands by number of seizures
- Top ten counterfeit trademarks by number of items seized
- Top ten counterfeit trademarks by retail value
- Top ten “departure” countries by number of seizures and seized items
- Top ten “destination” countries by seizure numbers
- Top ten “1st transit” countries
- Top ten seizure locations (i.e. ports/airports)
- Types of seizure location by seizure number and seized items (e.g. airport, seaport etc).

Discussion

20. A general comment, which applies to all national data collected by customs, is that they represent a probably small and certainly unscientific sample of all counterfeit and pirated goods passing through customs. Statistically, it is not valid to draw inferences from such a sample because it is not random or designed to elicit accurate estimates of the character of the whole

¹⁶ <http://english.customs.gov.cn/Default.aspx?tabid=7039>

¹⁷ http://www.dxbcustoms.gov.ae/NR/rdonlyres/0DDA2DAA-A538-4F3E-97AE-7ADE685C7798/3284/We_Are_IPR_ENG.pdf

¹⁸ http://www.wcoomd.org/home_cboverviewboxes_valelearningoncustomsvaluation_epipr.htm
www.wcoomd.org/files/1.%20Public%20files/PDFandDocuments/Enforcement/WCO_Customs_IPR_2010_public_en.pdf

²⁰ <http://www.wcoomd.org/files/1.%20Public%20files/PDFandDocuments/Enforcement/IPR%202008%20EN%20web.pdf>

population under study. These statistics are therefore not a reliable predictor of the overall rate of counterfeiting and piracy and, even less so, of trends in them. As an OECD report says:

“...the fraction of what is caught is unknown. Moreover, seizures and arrests depend heavily on the investigation process behind it. As these are often highly selective in order to increase time and budget efficacy, extrapolation from seizure statistics can be heavily biased”²¹

21. In a similar vein, the US GAO says:

“...it is difficult to know how complete the data are. For example, it is difficult to determine whether CBP’s annual seizure data...reflect the extent and types of counterfeits entering the United States in any given year, the counterfeit products that were detected, or the level of federal border enforcement effort expended.”²²

22. The situation is somewhat analogous to the difference between the actual level of crime in a country, and the crimes as reported to and by the police. Thus, in the UK there is an ongoing British Crime Survey (BCS) which reports on levels of crime by means of interviews of a scientifically designed sample of the population, as well as another set of Recorded Crime statistics provided by the police. The authorities believe that “BCS can provide a better reflection of the true extent of crime because it includes crimes that are not reported to the police. The BCS count also gives a better indication of trends in crime over time because it is unaffected by changes in levels of reporting to the police and in police recording practices.”²³ In the case of customs data there is no equivalent to the BCS based on a statistically valid sample design. However, it should be noted that designing a survey of “victims” of counterfeiting, many of whom may be willing “victims”, is rather more challenging than for most other types of crime.

23. Given the shaky basis for these statistics, authorities should be wary about the way statistics are presented, or the claims they make. For example the EU website presents the 2010 figures in this way:

“Statistics published on 14 July 2011 by the European Commission show an **amazing** upward trend in the number of shipments suspected of violating intellectual property rights (IPR). Customs in 2010 registered around 80,000 cases, a figure that has almost doubled since 2009. It refers to more than 103 million products detained at the EU external border.” (italics original, bold added)²⁴

24. The language used here is not neutral and the statistics are quoted selectively. For instance, the presentation fails to note that the number of products detained in 2010 (as opposed to shipments) has actually fallen by 42% since 2008 while the almost doubling of shipments in reality represents an increase of just under 82% in the number of shipments (seizures) between 2009 and 2010.

25. This does not mean that customs statistics are without value, if interpreted properly. They should represent an accurate picture of what seizures customs have undertaken in a particular year and their salient characteristics. As such they should, like any series of statistics measuring an organisation’s activities and achievements, have value to those managing customs as performance indicators. In addition such statistics will have value to those to whom customs are accountable in government, and to stakeholders interested in the enforcement of intellectual property rights from one perspective or another.

²¹ *Background Report for the WIPO/OECD Expert Meeting on Measurement and Statistical Issues* OECD 2005 <http://www.oecd.org/dataoecd/42/44/35651123.pdf>

²² *Intellectual Property: Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods* GAO-10-423 April 12, 2010 <http://www.gao.gov/new.items/d10423.pdf>

²³ *Latest Crime Statistics* <http://www.crimestoppers-uk.org/crime-prevention/latest-crime-statistics>

²⁴ http://ec.europa.eu/taxation_customs/customs/customs_controls/counterfeit_piracy/statistics/index_en.htm

26. The difficulty, which is also common to many series of output statistics, is in their interpretation. To what extent do observable trends represent efforts by the organisation, or changes in the external environment? Inevitably they will be a combination of both and it will be for management to determine, in the light also of other information available to it about the internal and external environment, what the implications are for the disposition of internal resources and how it, or others, could seek better to influence and manage the external environment.

27. In general, the available customs reports, in spite of their statistical deficiencies as a means of estimating incidence, could benefit from greater analytical input, bearing in mind the number of variables that are monitored (product category, source country, mode of transport, and so on) which could be used to detect meaningful relationships of greater operational utility. Of course, this may be a consequence of such reports being summary compilations of data for public consumption, and internal use of this data may include much more analysis, and more detailed breakdowns (e.g. by port or transport mode) which would feed more directly into operational issues. It should be noted, however, that a 2007 GAO report concluded:

“While CBP has publicly cited increases in enforcement outcomes based on larger numbers and higher values of IP seizures, indicating its success, it has not fully disclosed the composition of those seizures or analyzed what has accounted for the increases.”

In addition:

“... the agency has sufficient information available despite the data’s limitations to conduct a more comprehensive review of IP border enforcement outcomes in ways that would provide insights about targeting, examination, seizure, and penalty assessment practices across ports. Certain improvements to existing data could make this type of review even more powerful ... CBP would be able to make more measurable links between its strategic objectives and enforcement outcomes, leading to more effective management practices and allocation of limited resources. Given the challenging environment in which CBP must process a vast influx of goods into the United States every day, it is particularly important that the agency consistently collect key data, perform useful analysis of the data, and use the data to better inform policies and practices and make decisions to focus its use of limited resources.”²⁵

28. More explanation is required of the statistics that are presented. Most of the countries reviewed appear to provide no analysis of the figures presented. In that sense the US and the EU are the most advanced. But too often notable trends are not acknowledged or explained, or their possible significance considered. For example in the EU, cigarettes (category 10a) seized increased by over 50% between 2009 and 2010, with an estimated retail value of €125 million in 2010 (over 11% of total seizures). Unrecorded audiovisual cassettes and cartridges (category 8b) fell by 84% from 5% of articles seized in 2009 to 0.8% in 2010. Such massive variations from year to year demand some explanation but none is provided. Similarly, the figures reveal that the great majority of the large increase in seizure numbers in 2010 was a result of increases in just two countries – Germany and the United Kingdom. Greece had the largest number of intercepted articles in the EU by a considerable margin. In neither case are these numbers commented on or an explanation attempted. The US report, by contrast, is stronger at explaining some trends but is, overall, very much briefer with much less detail than in the EU report.

29. The WCO summary report contains very little analysis. The text mainly describes the content of the table, or sometimes adds additional factual information not contained in a table. It is difficult to know how to interpret such data without knowledge of the countries that have

²⁵

Intellectual Property: Better Data Analysis and Integration Could Help U.S. Customs and Border Protection Improve Border Enforcement Efforts GAO-07-735 April 26, 2007 <http://www.gao.gov/products/GAO-07-735>

submitted information to the survey. WCO say that they have difficulties in getting Members to submit data for a number of reasons. Reporting is voluntary, there are resource limitations in many member countries, some customs authorities may not be responsible for intellectual property infringements, and some countries do not even have their own data to submit. Thus, of the 70 countries that submitted data in 2010, only about 40 were from developing countries. The voluntary nature of the exercise also means that the more detailed reports cannot be edited for publication without getting agreement from all members on what data was sensitive, which is difficult to achieve.

International Comparability

30. The data presented by different agencies is not presented on a comparable basis. The formats and the detail are very different, and reports generally do not provide any definitional information which would form the basis of considering comparability. In particular, whereas EU data presents seizures and the number of articles seized, the US data deals only in seizures and goods values (either the import price - domestic value - or the full retail value of the original good - MSRP). And the commodity categories used are different. However, comparing results at the highest level for 2010 might help to identify common patterns. For instance a comparison of the EU and US figures :

- The rapid increase in the number of seizures in the post/mail and in express deliveries
- In spite of increasing seizures overall, the striking decline in the number of articles/domestic value seized since 2008

31. There are also major differences. The commodity composition of seizures measured by retail value (EU) or MSRP (US) is different. For example “handbags/wallets/backpacks” account for 38% of US seizures but the nearest EU equivalent category only 9% of seizures. “Clothing and accessories” is the largest EU item at 18% by value compared to “wearing apparel” in the US at 10%. Based on retail value the top three EU items are clothing, cigarettes and sports shoes. The top three US items by MSRP are handbags/wallets/backpacks, footwear and watches/parts (but footwear, consumer electronics and wearing apparel by the domestic value measure).

32. Because US data are presented mainly in terms of value, the method of valuation used would be very important in determining comparability. The EU provides no detail on how retail value is calculated for what are categories containing very heterogeneous goods. The US provides a little more detail on the principles of valuation and also notes that as from 2011 it will “determine MSRP for individual seizures for greater precision”. However it is clear from the US report the method of valuation is very important in quantifying the importance and ranking of seizures. The markup of MSRP over domestic value (which is broadly the value of imports) varies between 9% for pharmaceuticals to 3384% for handbags/wallets/backpacks. The average markup on all products in 2010 was 650%. That is why domestic value gives a very different picture of the commodity importance of seizures compared to MSRP. It can also be inferred that international comparisons based on differing valuation methods are very problematic.

33. The WCO data could in principle provide the basis for international comparability. However, on the face of it, the data provided by WCO is not easy to reconcile with information in the other reports. The table below shows potentially comparable data on seizures from different reports. Although WCO data excludes seizures less than 50 articles or a value of €10000, the differences are difficult to reconcile. WCO cannot easily explain why there are such significant differences with their data so the matter requires further investigation.

No of Seizures	WCO (calendar year)	US (FY Oct-Sept)	EU (calendar year)
United States			
2009	8291	14841	
2010	11552	19959	
Germany			
2009	1429		8324
2010	1319		22146
France			
2009	1208		3006
2010	1220		748
Italy			
2009	821		5189
2010	859		5137
Spain			
2009	597		3084
2010	813		3169

DOMESTIC LAW ENFORCEMENT DATA

National Data

34. There is remarkably little published data on the results of domestic law enforcement in relation to counterfeiting and piracy. One publication that stands out is the UK IP Crime Report, which has been published annually since 2004.²⁶ The report highlights current and emerging threats surrounding counterfeiting and piracy, including those conducted via the internet. It also seeks to raise awareness of the diverse nature of fake goods, in particular those that harm consumers. It contains information about enforcement activities gathered from agencies such as trading standards, police and customs along with industry bodies. The 2010/11 report²⁷ contains a review of available information on counterfeiting and piracy drawing on material from enforcement agencies and industry. It also highlights activities in the UK to combat IP crime and presents statistics and analysis based on an annual survey of trading standards offices, which are run by the local authorities in the UK and are principally responsible for monitoring and addressing counterfeiting and piracy. This is actually a very useful and balanced report which combines appropriate use of statistics with analysis and examples.

INTERPOL

35. INTERPOL maintains a closed database on International Intellectual Property (DIIP) Crime. This is an autonomous database containing information about transnational and organized intellectual property crimes. Data contained in the database is subjected to criminal analysis to identify links between transnational and organized cross-industry sector IP criminal activity; facilitate criminal investigations; and, develop regional and global strategic IP crime reports. INTERPOL does not disclose information contained in DIIP. Participating industries receive feedback in the form of referrals indicating that two or more industries are being targeted by the same transnational organized criminals.²⁸

²⁶ <http://www.ipo.gov.uk/pro-policy/pro-crime/pro-crime-report.htm>

²⁷ *IP Crime Report 2010/2011* UK Intellectual Property Office 2011 <http://www.ipo.gov.uk/ipcreport10.pdf>

²⁸ <http://www.INTERPOL.int/Public/FinancialCrime/IntellectualProperty/DIIP/Default.asp>

European Observatory on Counterfeiting and Piracy

36. The European Observatory on Counterfeiting and Piracy was launched to improve the quality of information and statistics related to counterfeiting and piracy on the Internal Market of the EU, to identify and spread national best practice strategies and enforcement techniques from both the public as well as the private sector and to help raise public awareness on the issue.²⁹ As part of the Observatory's work the European Commission has commissioned a comprehensive study that would develop a methodology to quantify the scope of counterfeiting and piracy on the EU market. The Commission wants to obtain more precise data on its actual scale and scope in as much detail as possible on the basis of the current existing, but fragmented and incomparable data. The contractor is asked to compile existing data and methodologies, to identify gaps and major issues, to propose a methodology for the collection, analysis and reporting of future data and submit, on the basis of this methodology, estimates of the overall scale and scope and impact of the problem in the EU. The results, expected next year, are intended to serve as a basis to develop priorities and target enforcement more effectively, and to pave the way for better collaboration and evidence-based policies.

INDUSTRY SOURCES

INTRODUCTION

37. In the absence of reliable data generated from official sources about either the extent of counterfeiting and piracy or its economic impact, industry associations have readily stepped into the breach. In turn many governments have come to rely, to a greater or lesser extent, on the results of industry surveys or evidence as a basis for policy action. In a report prepared for the last Advisory Committee on Enforcement (ACE) an official from the US GAO noted that:

"... [Government] officials told us they rely on industry statistics on counterfeit and pirated goods and do not conduct any original data gathering to assess the economic impact of counterfeit and pirated goods on the U.S. economy or domestic industries. However, according to experts and government officials, industry associations do not always disclose their proprietary data sources and methods, making it difficult to verify their estimates. Industries collect this information to address counterfeiting problems associated with their products and may be reluctant to discuss instances of counterfeiting because consumers might lose confidence. OECD officials, for example, told us that one reason some industry representatives were hesitant to participate in their study was that they did not want information to be widely released about the scale of the counterfeiting problem in their sectors."³⁰

38. In the United States, this reliance on industry evidence is quite marked, and the relationship between government and industry is institutionalized through advisory committees such as the Industry Trade Advisory Committee on Intellectual Property Rights (ITAC).³¹ Each year the United States Trade Representative's receives submissions from the private sector as part of the Special 301 process. Some of these submissions contain a great deal of statistical and other information relating to counterfeiting and piracy, obviously presented to make the industry case but information that is global in scope and which is not replicated in other countries. For instance in 2011 the International Intellectual Property Alliance (IIPA) presented

²⁹ http://ec.europa.eu/internal_market/iprenforcement/observatory/index_en.htm

³⁰ *Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods* WIPO/ACE/6/4 2010

³¹ http://www.wipo.int/edocs/mdocs/enforcement/en/wipo_ace_6/wipo_ace_6_4.pdf

<http://trade.gov/itac/committees/itac15.asp>

as a submission to the USTR its 25th annual piracy report with comprehensive recommendations for countries that should be placed on the Priority Watch and Watch lists.³²

39. While the United States has the most explicit partnership with industry in pursuing domestic and international policies on intellectual property, including counterfeiting and piracy, much of the evidence on which governments could base their policy decisions may necessarily come from industry in the absence of more independent alternative sources. Industry data necessarily needs to be viewed from the perspective that the industry has a case to make about the extent of counterfeiting and piracy, and an agenda for measures that governments should take through legislation or enforcement action.

40. Some of the issues dealt with below were addressed at the last ACE meeting, in particular in the literature review of the economic effects of counterfeiting and piracy (hereafter “the ACE 2010 review”).³³ Thus some of the comments on the methodology of data collection in that study may be repeated in brief here or referred to.

INDUSTRY ASSOCIATIONS

International Intellectual Property Alliance (IIPA)

41. The IIPA is a private sector coalition, formed in 1984, of trade associations representing U.S. copyright-based industries in bilateral and multilateral efforts working to improve international protection and enforcement of copyrighted materials and open up foreign markets closed by piracy and other market access barriers. It has seven member associations drawn from the software, music and film industries. It relies on data provided by several of its member associations to present data and evidence for the Special 301 process, as noted above. These contributions are reviewed further below. The IIPA website contains a compilation of the information in various forms on countries over the past decade, which contain both statistics and other information relating to the extent of alleged piracy in those countries.³⁴

Business Software Alliance (BSA)

42. The Business Software Alliance (BSA) is a nonprofit trade association created in 1988 to advance the goals of the software industry and its hardware partners. Its global mission is to promote a long-term legislative and legal environment in which the industry can prosper and to provide a unified voice for its members around the world. For many years it has produced an annual report on software piracy.

43. The 2010 study calculates piracy rates for 116 countries using the methodology set out in detail at Annex 1.³⁵

44. The basis of the BSA methodology is to determine how much PC software was deployed during the year, determine how much was paid for or otherwise legally acquired during the year, and then subtract one from the other to get the amount of unlicensed software. The piracy rate is the proportion of unlicensed software in the total software installed in the year. A recent report notes the following:

“While solid in principle...the model is still very dependent on complicated inputs that the BSA’s research vendor, the IDC (International Data Corporation), does not share. Conflicting

³² http://www.iipa.com/2011_SPEC301_TOC.htm

³³ *The Economic Effects of Counterfeiting and Piracy: A Literature Review* WIPO ACE/6/7

³⁴ http://www.wipo.int/edocs/mdocs/enforcement/en/wipo_ace_6/wipo_ace_6_7.pdf

³⁵ <http://www.iipa.com/countryreports.html>

³⁵ http://portal.bsa.org/globalpiracy2010/downloads/study_pdf/2010_BSA_Piracy_Study-Standard.pdf

estimates of the size of retail markets, for example, are relatively common outside the United States and Europe, as is difficulty in establishing how many computers are in use in different countries. In the case of Russia, for example, where the BSA prominently cites a 16% decrease in the piracy rate between 2005 and 2009 as evidence of effective enforcement strategies, we were unable to independently reproduce those inputs.”³⁶

45. The ACE 2010 review notes that while the survey undertaken in 28 countries may be sensible in its approach, it was difficult to establish what sampling biases there might be. More seriously, it criticised the possibility of further bias being introduced by estimating piracy rates for countries not in the sample surveys by means of a correlation between software usage and an “information development index” published by the International Telecommunications Union (ITU).

Entertainment Software Association (ESA)

46. The Entertainment Software Association is the U.S. association exclusively dedicated to serving the business and public affairs needs of companies that publish computer and video games for video game consoles, personal computers, and the Internet.³⁷ Unlike the BSA, the ESA does not publish a major annual report on piracy rates. On the other hand it does provide information on video and computer games piracy for inclusion in the IIPA's annual report. The ESA does not describe on its website the methodology used to collect information on piracy but the IIPA report provides a short description which is reproduced in Annex 1. This description is too cursory to allow any conclusions to be drawn about the reliability of the piracy statistics in the IIPA report.

Recording Industry Association of America (RIAA)

47. The RIIA is the trade organization that represents the major music companies in the US.³⁸ Like the ESA the RIIA contributes to the annual IIPA report. The methodology used is also presented in Annex 1. As with the ESA the information provided about methodology is insufficient to form a judgement about the reliability of any statistics generated.

International Federation of the Phonographic Industry (IFPI)

48. IFPI represents the recording industry worldwide, with a membership comprising some 1400 record companies in 66 countries and affiliated industry associations in 45 countries. IFPI's mission is to promote the value of recorded music, safeguard the rights of record producers and expand the commercial uses of recorded music in all markets where its members operate.³⁹ IFPI produced annual reports on mainly physical piracy between 2001 and 2006.⁴⁰ Subsequently they dropped these surveys as digital piracy became the major perceived threat. Currently it includes material on piracy in its annual Digital Music Report but this material is not based on any systematic research on its own account. For instance, the 2011 report refers to general trends and a number of studies undertaken by third parties to illustrate concerns about digital piracy.⁴¹ The IFPI also publishes annually the Recording Industry in Numbers⁴² which contains a similar short compilation of information on digital piracy, but not based on its own research.

³⁶ *Media Piracy in Emerging Economies* Social Science Research Council 2011 <http://piracy.ssrc.org/the-report>

³⁷ <http://www.theesa.com/about/index.asp>

³⁸ <http://www.riaa.com/index.php>

³⁹ <http://www.ifpi.org>

⁴⁰ http://www.ifpi.org/content/section_resources/piracy-archive.html

⁴¹ *IFPI Digital Music Report 2011* <http://www.ifpi.org/content/library/DMR2011.pdf>

⁴² http://www.ifpi.org/content/section_resources/rin/rin.html

Motion Picture Association of America (MPAA)

49. The MPAA represents the US film industry. It does not produce regular data on piracy but was responsible for a major study “The Cost of Movie Piracy” in 2005.⁴³ This study, based on a survey in 22 countries, concluded that the US industry lost \$6.1 billion in 2005 to piracy, 80% of which resulted from piracy overseas. It calculated that \$18.2 billion was lost by the industry worldwide. However the details of methodology were not presented – the only publicly available document appears to be the 14 slide powerpoint presentation referenced above. The GAO commented that it was “difficult, based on the information provided in the study, to determine how the authors handled key assumptions such as substitution rates and extrapolation from the survey sample to the broader population.”⁴⁴

Business Action to Stop Counterfeiting and Piracy (BASCAP)

50. BASCAP – was launched by the International Chamber of Commerce to connect and mobilize businesses across industries, sectors and national borders in the fight against counterfeiting and piracy, in particular to influence governments, the public and the media and to “[c]ompel government action and the allocation of resources towards strengthened intellectual property rights enforcement.”⁴⁵

51. BASCAP has commissioned a number of studies that model the economic effects of counterfeiting and piracy. The terms of reference for this study exclude review of the methodologies used in such studies but we briefly review the data sources used. A 2009 study by Frontier Economics looked at four sectors: luxury goods, food and beverages, pharmaceuticals and software.⁴⁶ They reached estimates of counterfeiting rates by, in the first instance, **making assumptions** in each sector about the proportion of consumers buying counterfeits knowingly or unknowingly. They then apply assumed substitution rates in each sector, assuming that knowing buyers have lower substitution rates than unknowing ones. However the exact assumptions made are only discussed very selectively because of, the authors say, commercial sensitivities and they therefore have not been able to report the exact rates used for most product areas. But they say they have been consistently conservative in their approach. As pointed out in a background document to the recent UK Hargreaves report⁴⁷ their final estimates of losses to the industry, or in employment or tax revenues, are wholly determined, other things being equal, by the largely undisclosed initial **assumptions** of counterfeiting rates.⁴⁸ Thus, in reality, the findings of the BASCAP study are based on assumptions not on hard data concerning rates of counterfeiting and piracy.

52. A second report in 2010 looked at the EU’s creative industries.⁴⁹ It was extensively reviewed in the Hargreaves report background document which criticised its estimates of infringements as being “not explicitly verifiable, and where sourced ... [relying] on single statements rather than peer reviewed research or proper sampling”. Similarly the assumptions

⁴³ *The Cost of Movie Piracy* MPA/Lek Consulting 2006 <http://mpa-i.org/pdf/leksummaryMPA%20revised12008.pdf>

⁴⁴ *Intellectual Property: Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods* GAO-10-423 April 12, 2010 <http://www.gao.gov/new.items/d10423.pdf>

⁴⁵ <http://www.iccwbo.org/bascap/id883/index.html>

⁴⁶ *The Impact of Counterfeiting on Governments and Consumers* BASCAP/Frontier Economics May 2009 <http://www.iccwbo.org/uploadedFiles/BASCAP/Pages/Impact%20of%20Counterfeiting%20on%20Government%20and%20Consumers%20-%20Final%20doc.pdf>

⁴⁷ *Digital Opportunity: A Review of Intellectual Property and Growth An Independent Report by Professor Ian Hargreaves* May 2011 <http://www.ipo.gov.uk/ipreview-finalreport.pdf>

⁴⁸ *Supporting Document CC: Data on the Prevalence and Impact of Piracy and Counterfeiting* 2011 <http://www.ipo.gov.uk/ipreview-doc-cc.pdf>

⁴⁹ *Building a Digital Economy: The Importance of Saving Jobs in the EU’s Creative Industries* BASCAP/TERA 2010 [http://www.iccwbo.org/uploadedFiles/BASCAP/Pages/Building%20a%20Digital%20Economy%20-%20TERA\(1\).pdf](http://www.iccwbo.org/uploadedFiles/BASCAP/Pages/Building%20a%20Digital%20Economy%20-%20TERA(1).pdf)

on substitution rates were questioned. Overall the Hargreaves team concluded that “of the €1.4bn piracy losses for the UK cited ... they only present evidence for between €475m and €522m which can be verified.”⁵⁰

53. A third report in 2011 sought to update the OECD study on counterfeiting and piracy in international trade⁵¹ (see below), and to extend it by estimating the value of counterfeit and pirated goods not crossing borders and the volume of pirated digital products distributed via the Internet.⁵² In order to update the OECD study estimate of up to \$200 billion based on 2005 data they **assumed** that between 25% and 75% of the recorded increase in customs seizures in relation to trade volumes in the US and EU between 2005 and 2008 was a result of increased counterfeiting in that period. They then apply this to the updated OECD estimate of \$250 billion which related to 2007.⁵³ The updated OECD data was based on changes in the volume and composition of trade between 2005 and 2007, but not on assumptions about an increased rate of counterfeiting and piracy per unit of trade. On this basis the BASCAP study estimated trade in counterfeit and pirated goods at between \$287 billion and \$362 billion. In addition by extrapolating the OECD’s methodology for estimating propensities to counterfeit in international trade by sector and by country to data on domestic production as measured by GDP (which involves a number of questionable assumptions) they generate an estimate of up to \$170 billion as a “maximum global value” of counterfeits produced and consumed domestically. However, having taken account of possibly consistent variations between the rates of counterfeiting in exports and domestic production, and the **assumption** they make about increased incidence of counterfeiting after 2005, they finally conclude that their best estimate is between \$140 billion and \$215 billion. There is a question mark as to whether it is legitimate to add this estimate of “domestic” counterfeiting to that in international trade. As regards digital piracy they rely on a combination of industry and academic surveys, studies and data and their own **assumptions** and judgements to estimate a total value of between £28.5 billion and \$75 billion in 2008. Projecting their estimates forward using assumed annual growth rates for each of the three categories (between 15-18%), they estimate a total value of counterfeit and pirated products of between \$1220 billion and \$1770 billion in 2015.

54. In reality, these 2011 BASCAP estimates are based on a number of debateable assumptions, building upon estimates from the OECD study discussed below, which are in turn based on its own debateable assumptions and methodology. Thus, like the earlier BASCAP studies there is no original data collection, only the generation of new assumptions, of inherently untestable validity.

International Chamber of Commerce - Commercial Crime Services (CCS)

55. The Counterfeiting Intelligence Bureau (CIB) formed in 1985 is a specialised bureau within CCS.⁵⁴ It seeks to protect industry from the damage caused by counterfeiting by gathering intelligence, making undercover enquiries, organising the seizure of counterfeits, and providing expert advice and training to its members. It also provides a confidential monthly newsletter and includes information on the provenance of counterfeit products and their distribution networks. CIB also maintains a database of press and media reports on seizures accessible on their website. It does not compile or present statistics as such.

⁵⁰ Supporting Document CC: Data on the Prevalence and Impact of Piracy and Counterfeiting 2011
<http://www.ipo.gov.uk/ipreview-doc-cc.pdf>

⁵¹ *The Economic Impact of Counterfeiting and Piracy* OECD 2008
http://www.oecd.org/document/4/0,3746,en_2649_34173_40876868_1_1_1_1,00.html

⁵² *Estimating the global economic and social impacts of counterfeiting and piracy* BASCAP/Frontier Economics 2011 <http://www.iccwbo.org/uploadedFiles/BASCAP/Pages/Global%20Impacts%20-%20Final.pdf>

⁵³ *Magnitude of Counterfeiting and Piracy of Tangible Products: An Update* OECD 2009
<http://www.oecd.org/dataoecd/57/27/44088872.pdf>

⁵⁴ <http://www.icc-ccs.org/home/cib>

Pharmaceutical Security Institute (PSI)

56. The PSI, established in 2002 and backed by 25 pharmaceutical companies, aims to protect public health, share information on the counterfeiting of pharmaceuticals and initiate enforcement actions through the appropriate authorities.⁵⁵ The PSI uses the WHO definition of counterfeits which, as noted above, can include medicines that are not counterfeit in the intellectual property sense. It also includes in its data illegally diversion of medicines and pharmaceutical theft. PSI publishes on its website the following data:

- Total number of incidents by year (2002-2010)
- Percentage of counterfeit seizures which are commercial, non-commercial or unknown
- Number of incidents by region
- Percentage change in counterfeit incidents by therapeutic category
- Percentage of arrests by region.

Additional data is included in the text accompanying the tables.

57. The PSI data is not very useful, being highly aggregated and covering not just counterfeits but theft and diversion.

OTHER INDUSTRY-SPONSORED STUDIES

Envisional Ltd

58. Envisional was commissioned by NBC Universal to analyse bandwidth usage across the internet with the specific aim of assessing how much of that usage infringed upon copyright.⁵⁶ It used its own research based on an analysis of usage at the following locations: BitTorrent sites, cyberlockers, video streaming sites, and other peer to peer (P2P) and file sharing sites such as eDonkey, Gnutella and Usenet. This was supplemented by a critical analysis of four other recent industry-sponsored studies. It concluded that, excluding pornography, 23.8% of all Internet traffic was infringing. Nearly half of this (11.4%) was accounted for by BitTorrent traffic, 5.1% by cyberlockers, 1.4% by video streaming traffic (although only 5.3% of such traffic was judged to be infringing) and 5.8% by other P2P and filesharing sites. It also concludes that infringing was lower in the US at 17.5%. Envisional concludes:

“Given the enormous, ever-growing, and constantly-changing size, shape, and consistency of the internet and the use that is made of it means that methodological issues abound when attempting to produce measurements of traffic and content. Yet even given the limitations of the data available, Envisional believes that [our] estimates...are more accurate than any that have been published before. This report draws together the data in a way that allows, for the first time, the organisations which can help shape the ways in which users interact and obtain content to understand how much of the internet is devoted to the distribution and consumption of infringing material.”

59. Without being an expert in the downloading technologies and terminology, it is difficult to assess the validity of this claim. However, Envisional have said that they did indeed check each file sampled to establish whether or not it infringed copyright and, as noted, they are confident in their results.

⁵⁵ <http://www.psi-inc.org/index.cfm>

⁵⁶ *An Estimate of Infringing Use of the Internet* Envisional Ltd 2011
http://documents.envisional.com/docs/Envisional-Internet_Usage-Jan2011.pdf

Internet Commerce Security Laboratory (ICSL)

60. ICSL in Australia, funded by government, university and industry, conducted an investigation of BitTorrent networks in 2010.⁵⁷ They concluded that 89% of all torrents from their sample were confirmed to be infringing copyright. Movies accounted for 43.3% of torrents, TV 29.1% and music 16.5%. Again pornography was excluded. However, this study was criticised for its faulty methodology, in the Envisional study and by others. As a result the ICSL produced a revised study in 2011.⁵⁸ In this study they claim to have addressed the points raised by their critics. They claim that 50% of torrents are fake, meaning they do not give access to the content claimed, but that of 97% of the most popular “real” torrents are copyright infringing.

UNPUBLISHED STUDIES

61. Industry sources frequently cite studies, presumably funded by industry, which are not published. For example, the IFPI 2011 Digital Music Report⁵⁹ cites the following:

- The proportion of internet users in Brazil and Spain accessing unlicensed sites (The Nielsen Company, October 2010)
- The proportion of unlicensed music downloaded in the UK (Harris Interactive September 2010). This report was commissioned by the British Recorded Music Industry (BPI) and the results, but not the methodology, are reported at some length in its Digital Music Nation 2010 report.⁶⁰
- A report of October 2010 by Professor Richard Waterman of the University of Pennsylvania on the proportion of downloads from the P2P service, Limewire, which were copyright protected. This report was commissioned by thirteen major record companies as expert evidence in their case against Limewire.

62. Again, because one cannot access the original studies or methodologies, one cannot establish how accurate their results might be.

INDEPENDENT STUDIES

INTERNATIONAL ORGANISATIONS

Organization for Economic Cooperation and Development (OECD)

63. In 2005, the OECD launched a major project to assess the magnitude and impact of counterfeiting and piracy. The objective of the project was to improve factual understanding and awareness of how large the problem was and the effects that infringements of intellectual property rights have on governments, business and consumers.⁶¹ The major output of this project was a report on the economic impact of counterfeiting and piracy published in 2008.⁶²

⁵⁷ *Investigation into the Extent of Infringing Content on BitTorrent Networks* R Layton and P Watters ICSL 2010 http://www.afact.org.au/research/bt_report_final.pdf

⁵⁸ *Determining Infringing Content on BitTorrent Network: Enhancing Sampling and Detecting Fake Files* R Layton and P Watters ICSL 2011 http://www.icsl.com.au/files/Report_August2011_final.pdf

⁵⁹ *IFPI Digital Music Report 2011* <http://www.ifpi.org/content/library/DMR2011.pdf>

⁶⁰ *Digital Music Nation 2010* BPI 2010 <http://www.bpi.co.uk/assets/files/Digital%20Music%20Nation%202010.pdf>

⁶¹ www.oecd.org/sti/counterfeiting

⁶² *The Economic Impact of Counterfeiting and Piracy* OECD 2008 http://www.oecd.org/document/4/0,3746,en_2649_34173_40876868_1_1_1_1,00.html

An update was published in 2009.⁶³ A report on digital piracy was also published in 2009.⁶⁴ The latter report does not, however, attempt any estimations of the extent of digital piracy.

64. The report's methodology is based on an examination of the degree to which different products are detected as counterfeit or pirated in international trade, and the degree to which different economies are detected as sources of these products. Taking a number of known biases into account, this information is then used to estimate a set of relative counterfeiting/piracy propensities which are then applied to statistics on international trade in product categories prone to counterfeiting. This provides the foundation on which a ceiling estimate of magnitude is approximated. The report concludes that its analysis suggests international trade in counterfeit and pirated goods could account for up to \$200 billion in 2005. However this estimate excludes counterfeit and pirated products that are produced and consumed domestically and pirated digital products distributed via the internet. The update in 2009 increased the estimate to \$250 billion, a result of applying the calculated propensities to changed trade patterns, rather than assumptions about an increased rate of counterfeiting/piracy per unit of trade.

65. The methodology was extensively reviewed by the 2010 ACE review. It concluded that the OECD's caution about the results was warranted, listing a number of problems inherent in the methodology. From our perspective, we should add that the OECD applied a quite sophisticated methodology to a set of data it obtained from a questionnaire sent to 169 WCO members. Only 70 members responded and, of these, only 45 provided information of sufficient quality to include in the analysis. The OECD admits that this was "a challenging problem for the analysis". Although the methodology for standardising the data is set out in some detail in the report, it is not always clear exactly how this was done or how widely varying bases for valuation were standardised. For example, values of seizures (Table 3.5) were reported by different customs authorities on different bases (from the declared value of the import to the retail value of the equivalent – Table 3.A2) which, as noted for US customs data above, can result in very large differences in valuation.

66. In the light of the admitted inadequacies in the information base the OECD report makes a number of recommendations on improving information highly relevant to this study. These include:

- improving information that is available from enforcement activities (i.e. customs and related law enforcement agencies)
- developing a framework for collecting information on the effects that counterfeit and pirated products are having on the health and safety of consumers
- expanding the use of surveys to collect basic information from rights holders, consumers and governments.

67. The OECD thinks that improved information would enable more far-reaching analyses to be carried out on the magnitude and effects of counterfeiting and piracy on economies. In turn, this would provide governments and other stakeholders with a firmer basis for developing more informed and effective policies and programmes to combat them. For instance it believes that WCO's Customs Enforcement Network (CEN) could be further developed as a harmonised system for recording counterfeiting and piracy internationally. We consider these suggestions further below.

⁶³ *Magnitude of Counterfeiting and Piracy of Tangible Products: An Update* OECD 2009

<http://www.oecd.org/dataoecd/57/27/44088872.pdf>

⁶⁴ *Piracy of Digital Content* OECD 2009

http://www.oecd.org/document/35/0,3746,en_2649_34173_43394531_1_1_1_1,00.html

World Health Organization (WHO)

68. WHO has monitored issues to do with counterfeit medicines (according to its definition) since the late 1980s.⁶⁵ Until very recently WHO publicised estimates of the prevalence of counterfeit medicines. A 2003 factsheet endorsed a global figure of more than 10% (attributed to the US Food and Drug Administration).⁶⁶ A 2006 update suggested replacing this estimate with more nuanced estimates. These included a prevalence of less than 1% in developed countries and of 10-30% in developing countries.⁶⁷ Currently, WHO summarises its view of the current prevalence of counterfeiting as in Box 2. It can be seen that assessing the extent of the problem in the medicines sector is as problematic as in other sectors, if not more so. In reality, and this applies to studies conducted by others outside WHO, studies focus on the testing of a sample of medicines marketed in particular countries to assess whether they meet the regulatory standards set for them. Some of these may be counterfeit, in the sense of seeking to emulate genuine brands, but others, possibly the majority, may simply be substandard medicines. Invariably such studies are not designed to establish the prevalence of counterfeits, as commonly interpreted outside the medicines sector.⁶⁸

BOX 2

Extent of the problem

Defining the extent of counterfeiting is difficult for a number of reasons.

The variety of information sources makes compiling statistics a difficult task. Sources of information include reports from national medicines regulatory authorities, enforcement agencies, pharmaceutical companies and nongovernmental organizations, as well as ad hoc studies on specific geographical areas or therapeutic groups. The different methods used to produce reports and studies also make compiling and comparing statistics difficult.

Studies can only give snapshots of the immediate situation. Counterfeiters are extremely flexible in the methods they use to mimic products and prevent their detection. They can change these methods from day to day, so when the results of a study are released, they may already be outdated.

Finally, information about a case under legal investigation is sometimes only made public after the investigation has been concluded.

Source: Counterfeit Medicines Factsheet N°275 WHO January 2010
<http://www.who.int/mediacentre/factsheets/fs275/en/index.html>

ACADEMIC STUDIES

69. A review of academic studies on counterfeiting and piracy suggests that there are very few, if any, which independently attempt to measure the overall impact of counterfeiting and piracy in terms of scale or impact. In particular this applies to counterfeiting and physical piracy. For instance, almost all the references quoted in the OECD study rely on governmental or

⁶⁵ <http://www.who.int/medicines/services/counterfeit/en/index.html>

⁶⁶ *Substandard and counterfeit medicines* Factsheet N°275 November 2003
<http://www.who.int/mediacentre/factsheets/2003/fs275/en>

⁶⁷ *Counterfeit medicines* Fact sheet revised 14 November 2006

http://www.who.int/medicines/services/counterfeit/impact/ImpactF_S/en/index.html

⁶⁸ A review of studies is in Caudron JM et al. *Substandard medicines in resource-poor settings: a problem that can no longer be ignored*. *Trop Med Int Health* 2008; 13(8): 1062-72.

industry sources. There are also some older studies on physical piracy whose importance is, of course, now very much diminished and are not further discussed here. On the other hand, there is a thriving literature relating to digital piracy, trying to elucidate its extent and its impact on consumers and industry. These use a variety of methodologies including studying samples of downloaders to estimate the degree of piracy and other ways to seek associations between downloading behaviour and decreased sales.

70. There is little dispute that there is large scale unauthorised downloading via the internet. The methodological issue mainly debated in the literature is the extent to which such downloading leads to lost legal sales, or indeed could have some positive effects for the originator. This issue goes beyond our terms of reference, but two recent reviews of the literature on this subject may be consulted for those interested.^{69 70}

CONCLUSIONS

QUALITY OF EXISTING DATA

Customs Data

71. As noted above, customs data on seizures is not collected on a statistically random basis – because customs do not examine shipments randomly but normally target those that intelligence suggests may be more likely to be counterfeit or pirated. Such data are therefore unsuitable for extrapolation to estimate the overall prevalence of counterfeiting and piracy. However, in the absence of anything better, they may be used for this purpose e.g. as in the OECD study. As also noted, international comparability is lacking because of national differences in definitions, legislation, and enforcement practices and procedures (including valuation practices). In theory the framework for reporting developed by the WCO could be used to bring about some degree of harmonisation but, for a number of reasons, this has proved difficult to bring about.

72. On the other hand it was noted that, used properly, more could be achieved by analysing the data to hand to customs authorities even if not suitable for extrapolation.

Domestic Law Enforcement Data

73. Very little data could be found relating to domestic law enforcement statistics on counterfeiting and piracy. The example of the annual UK IP Crime Report does not seem to be replicated in other countries. INTERPOL keeps a closed data base for international exchanges of operational information. The EU is developing new methodologies for gauging the extent of counterfeiting and piracy. There is certainly scope for countries to make more such information available publicly. In the circumstances an assessment of data quality was not really possible.

Industry Associations

74. As discussed above, studies conducted by, or commissioned by, industry associations often suffer from a number of defects. For example, typically base data is collected in a way

⁶⁹ *Academic Studies on the Effect of File-Sharing on the Recorded Music Industry: A Literature Review* V R Grassmuck Grupo de Pesquisa em Política Pública para o Acesso à Informação (GPOPAl) May 2010 http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1749579

⁷⁰ *What Can We Learn from Empirical Studies About Piracy?* Sylvain Dejean CESifo Economic Studies 2009 : ifp006v1-ifp006 <http://cesifo.oxfordjournals.org/content/early/2009/04/02/cesifo.ifp006>

that is confidential, or cannot be independently verified and has to be taken on trust. Third parties may be used to undertake surveys. Results from surveys may then be extrapolated to other countries predicated on a number of assumptions. The reports are not subjected to peer review in the same way as academic journal articles.

International Organisations

75. The OECD study is a sophisticated attempt to utilise a limited amount of data of limited comparability to generate overall estimates of counterfeiting and piracy. But the results must be treated with caution. In medicines, the WHO has come to the conclusion that it is not really possible to provide reliable estimates of medicines counterfeiting.

Independent Studies

76. These studies, as noted, do not generally attempt global estimates of counterfeiting and piracy. The quality of academic studies may obviously vary, and their conclusions may be contested, but they are usually subject to some degree of quality control through peer review.

IMPROVING STATISTICS ON COUNTERFEITING AND PIRACY

Introduction

77. It is obvious from the above, and the views of other commentators, that there is a serious lack of reliable statistics on counterfeiting and piracy. This applies to those relating to international trade, to those relating to domestic law enforcement, to industry-sponsored studies and to studies by international organisations. Our terms of reference require us to consider gaps in information needed by stakeholders and policymakers, opportunities for improved data collection at the national level, and the scope for international harmonisation of definitions and collection practices.

78. It is also apparent that governments and enforcement agencies would like to have access to data that is reliable and objective, and of the sort that would be useful for the purposes of policy and decision making.

Information Needed by Stakeholders and Policy Makers

79. While the general case for improving statistics on counterfeiting and piracy is apparent, there are a number of questions that arise relating to the exact nature of the statistics that are desired or required by policymakers. In particular there are costs of various kinds attached to collecting statistics, and choices therefore have to be made on priorities for data gathering. In addition, while there may be a general feeling that better statistics are needed, it is important to identify who in government in reality demonstrates the political will, and willingness to provide the resources, to push forward with new statistical projects. Important prior questions are:

- Why is it important to stakeholders and policymakers to have better statistics? For example, is there any operational value in establishing that that counterfeiting and piracy amounts to 5-7%, 2% or some other proportion of world trade? Do we need to know the exact extent of internet piracy? Put another way, how much might governments be prepared to pay to establish these proportions reliably?
- What sorts of statistics do governments, or different agencies of governments, really need? For what purpose are these statistics required? How will their collection impinge

on the operational effectiveness of enforcement activity? It may well be that general statistics are of less use than other kinds of statistics relating to a particular sectors, or than a facility to undertake one-off studies or surveys on particular topics. What would be required to combat apparel counterfeiting would be very different from what was required to combat internet piracy.

- Is the need for more statistics for publication, or for data that might be more useful for enforcement if not published?
- For governments and involved government agencies, how could they assess the potential benefits of improved statistics against the costs of achieving them?

80. Thus one is reluctant to recommend specific measures to fill gaps, improve statistics or to promote harmonisation without first seeking to establish from stakeholders, in particular those responsible in government for making policy and enforcing it, what their statistical needs are. In particular such an assessment should focus on what might be required to improve either policymaking or enforcement or both, and to elucidate how such an improvement in statistics might achieve that objective. Many of the possible actions required might be national in nature, but because of the international nature of much commerce in counterfeits, an assessment by an international body might make sense. Thus **the first recommendation is that an appropriate international body should:**

- **undertake a survey of governments and agencies responsible for enforcement to investigate unmet statistical needs in this area**
- **propose ways in which such needs might best be met**
- **suggest priorities for improving the statistical basis for enforcement**
- **identify the costs and benefits of different strategies.**

Opportunities for Improved Data Collection and Harmonisation

81. In line with this recommendation we hesitate to suggest at this stage specific and concrete recommendations on what should be done. That should depend on a more considered assessment of the costs and benefits of possible new initiatives. Rather we present a menu of the three main options for improvement, drawing in particular on previous suggestions made in the OECD study and in the 2010 ACE review, and highlight relevant issues in connection with them.

82. The first area relates to **customs data**. Here there are two main issues we have noted. First, relatively few customs authorities, particularly from developing countries, publish such data systematically on an annual basis. Secondly, there is no consistency in the way data is presented or analysed by different national authorities. The OECD study suggested that the WCO's Customs Enforcement Network (CEN) established in 2000 offered a promising way forward in the provision of better data on a harmonised basis. It suggested also that the CEN framework could relatively easily be adapted for use by other law enforcement agencies. In reality, as noted above, the results of the CEN in terms of harmonised information provision have not yet met expectations. A recommendation to build further on the CEN would need to consider the reasons why many countries seem reluctant or unable to report data through it, and to identify critical issues that need to be addressed to make the system widely and regularly used.

83. As also noted, customs data is not collected randomly, for good operational reasons, and this limits its wider utility. In the context of harmonisation, customs authorities need to consider the possibilities for additional data collection which would incorporate a statistically valid sampling procedure. It is not immediately apparent that this would be consistent with their operational responsibilities.

84. The second area is **domestic law enforcement data**. We have noted that very few countries collect, compile and analyse available domestic data in the way that is done in the annual UK IP Crime Report. This seems a useful way to focus attention on enforcement issues and to consider the implications for future policy making in this area. At this stage, considering the harmonisation of domestic law enforcement data seems a step too far.

85. Apart from improving as far as possible data derived from customs and domestic law enforcement activities, the nature of counterfeiting and piracy suggests a third area - the need for mounting more **surveys** (of rightholders, consumers or others), independent of industrial or other stakeholders. For instance, for monitoring general trends in counterfeiting and piracy a continuing survey on the lines of the British Crime Survey could be considered, either nationally or internationally. However there would be complex challenges in mounting such surveys and the costs of doing so would need to be weighed against the benefits. In addition there is no doubt scope for a series of one-off surveys of varying kinds designed to identify and address specific problems and issues.

[Annex follows]

BSA 2010 METHODOLOGY⁷¹

BSA retained Ipsos Public Affairs to survey more than 15,000 business and consumer PC users. The surveys were conducted, online or in-person, in 32 markets that make up a globally representative sample of geographies, levels of IT sophistication, and geographic and cultural diversity.

The surveys are used, in part, to determine the “software load” for each country — that is, a picture of the number of software programs installed per PC, including commercial, open-source and mixed-source programs. Respondents are asked how many software packages, and of what type, were installed on their PC in the previous year; what percentage were new or upgrades; whether they came with the computers or not; and whether they were installed on a new computer or one acquired prior to 2010.

Calculating Software Piracy Rates

Since 2003, BSA has worked with the International Data Corporation (IDC) to determine PC software piracy rates and the commercial value of pirated software. The process involves collecting 182 discrete data inputs and evaluating PC and software trends in each of 116 markets. The basic method for coming up with the piracy rate and commercial value of unlicensed software in a country is as follows:

- Determine how much PC software was deployed during the year.
- Determine how much was paid for or otherwise legally acquired during the year.
- Subtract one from the other to get the amount of unlicensed software.

Once the amount of unlicensed software is known, the PC software piracy rate is computed as a percentage of total software installed.

To calculate the total number of software units installed — the denominator — IDC determines how many computers there are in a country and how many of those received software during the year. IDC tracks this information quarterly in 105 countries, either in products called “PC Trackers” or as part of custom assignments. The remaining few countries are researched annually for this study.

Once IDC has determined how many computers there are, and using the software load data collected in the survey, it can determine the total software units installed — licensed and unlicensed — in each country.

To estimate the software load in countries not surveyed, IDC uses a series of correlations between the known software loads from survey countries and their scores on an emerging market measure published by the International Telecommunications Union, called the ICT Development Index. IDC also considers other correlations such as gross domestic product per capita, PC penetration and various measures of institutional strength. From these, IDC estimates the software load for non-surveyed countries.

To get the number of unlicensed software units — the numerator of the piracy equation — IDC comes up with a value measure of the software market. IDC routinely publishes software market data from about 80 countries and studies roughly 20 more on a custom basis. For the few remaining countries, IDC conducts annual research for the purposes of this study. This research provides the value of the legally acquired software market.

⁷¹ Adapted from description of methodology in the 8th BSA Global Software Piracy Study <http://portal.bsa.org/globalpiracy2010/methodology.html>

To convert the software market value to number of units, IDC determines an average price per software unit for all of the PC software in the country. This is done by developing a country-specific matrix of software prices — such as retail, volume-license, OEM, free, and open-source — across a matrix of products, including security, office automation, operating systems, and more. IDC's pricing information comes from its pricing trackers and from local analysts' research. The weightings — OEM versus retail, consumer versus business — are taken from IDC surveys.

IDC multiplies the two matrices to get a final, blended-average software unit price.

To arrive at the total number of legitimate software units, IDC applies this formula:

Software Market Value/Average Software Unit Price = Legitimate Software Units

Subtracting the number of legitimate software units from the total software units reveals the number of unlicensed software units installed during the year.

This process provides the underlying data for the basic piracy rate equation.

Calculating the Commercial Value of Pirated Software

The commercial value of pirated software is the value of unlicensed software installed in a given year, as if it had been sold in the market. It provides another measure of the scale of software piracy and allows for important year-over-year comparisons of changes in the software piracy landscape.

It is calculated using the same blend of prices by which we determine the average software unit price, including: retail, volume license, OEM, free, open-source, etc. The average software unit price is lower than retail prices one would find in stores.

Having calculated the total units of software installed, as well as the number of legitimate and unlicensed software units installed and the average price per software unit, IDC is able to calculate the commercial value of unlicensed software.

What Software is Included

The BSA Global Software Piracy Study calculates piracy of all software that runs on personal computers — including desktops, laptops, and ultra-portables, including netbooks.

It includes operating systems, systems software such as databases and security packages, business applications, and consumer applications such as games, personal finance, and reference software. The study also takes into account the availability of legitimate, free software and open-source software, which is software that is licensed in a way that puts it into the public domain for common use. It is typically free but can also be used in commercial products.

The study excludes software that runs on servers or mainframes and routine device drivers, as well as free downloadable utilities, such as screen savers, that would not displace paid-for software or normally be recognized by a user as a software program.

It includes software as a service if it is paid for, but excludes free, Web-based services that might supplant the need for a paid-for package to be installed on a PC. Software sold as part of a legalization program — such as a bulk sale to a government to distribute to schools — is included in the study.

ESA METHODOLOGY⁷²

In select countries, the Entertainment Software Association (ESA) has provided estimates of the overall number of connections made, during 2010, by users of leading peer-to-peer (P2P) protocols for purposes of making unauthorized copies of particular ESA member game titles. The methodology underlying these estimates is as follows:

Vendors for ESA's online enforcement program monitor for connection activity involving approximately 230 of ESA members' leading game titles on major public P2P networks. The data is broken down, by country, based on the country of operation of the ISP.

This data is only a subset of the overall downloading activity occurring during the monitoring period, as it accounts only for file sharing connections made through certain P2P protocols (BitTorrent, eDonkey, Gnutella, Ares) for purposes of sharing particular game files, but does not include downloads of those files that occur directly from hosted content, such as games found "one-click" hosting sites, such as rapidshare.com.

Because it is premised on a selection of ESA member game titles, this methodology does not take into account piratical activity involving unmonitored member titles and titles of non-member publishers. In addition, this methodology likewise does not take into account piratical activity for unverified copies of titles being shared on P2P networks.

Inferences regarding detections per capita and detections per internet user rely on data from the CIA World Factbook (<https://www.cia.gov/library/publications/the-world-factbook/>) and other public sources.

RIIA METHODOLOGY⁷³

The Recording Industry Association of America (RIAA) collects market data from the local industry or from executives with responsibility for the particular territory. The estimates are based on local surveys of the market conditions in each territory. Each submission is reviewed against a range of sources:

- Market surveys by anti-piracy personnel and/or third parties;
- Optical disc industry and CD-R burning data provided by third-party consultants;
- Legitimate sales;
- Enforcement data and anti-piracy developments;
- Historical piracy estimates; and where possible,
- Economic indicators, professional surveys and academic studies of piracy or counterfeit goods.
- Where possible, legitimate revenue from online and mobile networks.

The numbers produced by the music industry in most cases reflect estimates of the level and value of pirate sales of U.S. repertoire. This does not take into account downstream (or value chain) losses from high piracy levels acting as a drag on the economic development of legitimate markets. In cases where circumstances permit, rather than reporting pirate sales, RIAA projects unit displacement (real losses). In such cases, "loss" data does not reflect the

⁷² Reproduced from IIPA 2011 Submission Appendix B
<http://www.iipa.com/rbc/2011/2011SPEC301METHODOLOGY.pdf>

⁷³ Reproduced from IIPA 2011 Submission Appendix B
<http://www.iipa.com/rbc/2011/2011SPEC301METHODOLOGY.pdf>

value of pirate sales but rather the value of estimated lost sales. In most cases, this would be significantly higher than the value of pirate sales. Where possible, RIAA estimates losses and piracy rates occurring via online and mobile networks and in appropriate cases has so designated this in the text of the country report.

[End of Annex and of document]