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The Economic Impact of Counterfeiting

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FOREWORD

This report has been prepared by Ms Hema Vithlani of the ICC Counterfeiting Intelligence Bureau, for the Industry Division of the OECD's Directorate for Science, Technology and Industry. It was initially presented to the Industry Committee on 12-13 March 1997 and subsequently revised. It is published on the responsibility of the Secretary-General of the OECD.

It provides a comprehensive overview of the menace that counterfeiting imposes to industry world-wide. The problem is not limited to a few products and certain countries but, as the report shows, it is a global problem affecting a wide range of industries. Moreover, it may have a devastating impact on society as a whole.

The report discusses the means of protection against counterfeiting and presents policy initiatives. It lists contact details of organisations that can assist in the fight against counterfeiting.

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EXECUTIVE SUMMARY

This report aims to introduce some of the key issues relating to the cost of counterfeiting and prime areas of concern.

The legal framework

For the purpose of the report, the term "counterfeiting" is used in its broadest sense and encompasses *any manufacturing of a product which so closely imitates the appearance of the product of another to mislead a consumer that it is the product of another*. Hence, it may include trademark infringing goods, as well as copyright infringements. The concept also includes copying of packaging, labelling and any other significant features of the product.

Overview of industries affected by counterfeiting

It is very hard to obtain accurate statistics on counterfeiting, mainly because it is a clandestine activity. However, the copyright industries of America have collected detailed information on piracy of their products for a number of years. These sectors suffer the largest losses. About half of all motion picture videos, more than 40 per cent of all business software and a third of all music recordings sold in 1996 were pirated copies.

Counterfeit clothing, both fashion and sportswear, is very prevalent in Europe. A common technique is to import plain clothing and attach the labels in one EU Member State and then release the products for sale in another Member State, benefiting from the free movement of goods across borders.

In the spare-parts industries, counterfeits are part of the overall problem of unapproved spare parts. They are traded on the grey market, together with over-runs, recycled items, copy parts and stolen goods, making it very difficult to control the market and separate the illegal items from the legal.

Geographical spread of counterfeit products

While most countries have some trade in counterfeit goods, some have become notorious for producing and exporting large quantities of fakes. Information from the customs services of the United States and EU Member States provides an insight into which countries are the biggest exporters of fakes and the types of products that are being counterfeited.

The top five suppliers of counterfeit goods to the United States in 1997, were China, Korea, Chinese Taipei, Hong Kong (China) and the Philippines. The most common products were media

(CDs, videos, computer games, etc.), wearing apparel and lighting/power goods. In total, the US Customs seized IPR-infringing goods worth US$54 million during fiscal year 1997.

The main sources of fakes imported to the European Union were Poland, Thailand, Turkey and the United States. Clothing accounted for more than half of the items seized.

The impact of counterfeiting

Industry world-wide loses large amounts to counterfeiters. These losses not only affect the producers of genuine items, but they also involve social costs. The ultimate victims of unfair competition are the consumers. They receive poor-quality goods at an excessive price and are sometimes exposed to health and safety dangers. Governments lose out on unpaid tax and incur large costs in enforcing intellectual property rights. There is also an increasing concern that counterfeiting is related to other criminal activities, such as trade in narcotics, money laundering and terrorism.

It is estimated that trade in counterfeit goods is now worth more than 5 per cent of world trade. This high level can be attributed to a number of factors: *i)* advances in technology; *ii)* increased international trade, emerging markets; and *iii)* increased share of products that are attractive to copy, such as branded clothing and software.

Protection against counterfeiting

Companies, as well as enforcement agencies, are becoming increasingly aware of the problems of counterfeiting. All companies need to make sure that their trademarks are adequately protected and to implement anti-counterfeiting policies to deal with the menace. A number of technologies, such as holograms, smart cards, biometric markers and inks, can be employed to protect and authenticate genuine products. These devices vary considerably in the degree of sophistication and cost. However, in order to be implemented the technology must be cost-effective, compatible with the product and distribution chain, resistant and durable.

The lack of information sharing is often perceived to be one of the main obstacles in the fight against counterfeiters. The World Customs Organisation (WCO) and Interpol now react proactively. They employ databases on counterfeits and conduct training for officials in partnership with private industry.

A number of policy initiatives exist at both the private and the official level. Countries with a strong representation of trademark owners have established anti-counterfeiting associations. These are membership organisations, whose main activities include promoting adequate IPR protection, information gathering and liaison with enforcement agencies.

Some trade associations are very active in assisting their members to combat counterfeiting. These include the Business Software Alliance (BSA) and the International Federation of the Phonographic Industry (IFPI). The latest international initiative is the Global Anti-counterfeiting Group (GACG) which is a forum for discussion aimed at raising awareness of the health and safety hazards of fakes.

1. THE COUNTERFEITING INDUSTRY – THE LEGAL FRAMEWORK

Definitions and terminology

Counterfeiting is ultimately an infringement of the legal rights of an owner of intellectual property.

The Agreement on Trade-related Aspects on Intellectual Property Rights (the TRIPs Agreement) defines counterfeiting and piracy as follows:

For the purpose of this Agreement:

a) "counterfeit trademark goods" shall mean any goods, including packaging, bearing without authorisation 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;

b) "pirated copyright goods" shall mean any goods which are copies made without the consent of the right holder or person duly authorised 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.

Technically, the English term "counterfeiting" only refers to specific cases of trademark infringement. However, in practice, the term is allowed to encompass any making of a product which so closely imitates the appearance of the product of another as to mislead a consumer that it is the product of another. Hence, it may also include the unauthorised production and distribution of a product that is protected by other intellectual property rights, such as copyright and neighbouring rights. This is in line with the German term "*Produktpiraterie*" and the French term "*contrefaçon*", which both cover a broader range of intellectual property right infringement (Clark, 1997).

In fact, different types of IPR infringements often overlap. Music piracy for example, mostly infringes copyright as well as trademark protection. Fake toys are often sold under a different name but infringe the design protection of the toy. Even where there is no trademark infringement, the evolving factual problems and subsequent legal issues often bear a close resemblance to cases of counterfeiting. For the purpose of this report, it is therefore easiest to use one term to address counterfeiting, piracy and related issues. The concept will include the copying of packaging, labelling or any other significant features of the goods.

Related activities

A number of activities, such as parallel trading and factory over-runs, are treated as counterfeiting by trademark owners but not by enforcement agencies.

"Parallel trading" refers to situations where products are legitimately bought in one territory and diverted for sale to another territory without the consent of the right holder in the receiving territory. It is facilitated by two principles that limit the rights of an IPR owner: *i)* the principle of territoriality, *i.e.* the IPR protection is valid only for specific countries or regions; and *ii)* the principle of exhaustion, *i.e.* the right owner has very limited rights to prevent further distribution of a product that is put on the market with his consent.

Parallel trading, or grey-market trade, is now well established and operates side by side with the "authorised" market. Prior to the Trademark Directive of 1989, several Member States of the European Union applyied the doctrine of international exhaustion which implies that the rights are considered to be exhausted as soon as the goods have been sold in any territory. The doctrine limits the function of Trademark Law only as a guarantee of the authenticity of the commercial origin of the goods and restricts further control by the trademark owner (Khur, 1997). However, the 1989 Trademark Directive has narrowed the exhaustion to the territory of the European Economic Area (EEA).

Consequently, the importation of trademark-protected goods from a country outside the EEA would constitute a trademark infringement. Many trademark owners treat the goods as counterfeits and try to take legal action against the parallel traders. However, the goods are authentic in the sense that they originate from the trademark owner and would have been legitimate according to the old doctrine. Therefore, enforcement agencies are reluctant to take action against parallel traders and even civil litigation may be difficult to win.

A related problem for trademark owners is the unauthorised production by legitimate suppliers. In some sectors, such as toys and spare parts, it has become the practice for suppliers to produce "over-runs" – extra quantities of products which they do not account for – and sell them on the black market. The trademark owner again considers the goods to be counterfeits but finds it difficult to take action. Courts and enforcement agencies treat over-runs as a breach of contract rather than as a trademark infringement.

Civil, administrative and criminal offence

Civil action

As intellectual property rights have become more important for companies and received more attention from governments, countries have responded to domestic and international pressures and have strengthened legal protection in favour of right holders.

The most common action against counterfeiters is civil litigation. The action generally involves proceedings against those directly involved in the production, distribution and sale of counterfeit goods. Judicial procedures for some form of litigation are in place in most countries and Article 42 of the TRIPs Agreement includes it as a basic protection for right holders:

"Members shall make available to right holders civil judicial procedures concerning the enforcement of any intellectual property right covered by this Agreement".

Whilst the Agreement outlines basic fair and equitable procedures, their efficiency may vary significantly. The right holder often has difficulties in obtaining and preserving the necessary evidence of counterfeiting and, even if the court awards substantial damages, it may be difficult to secure any payment.

Criminal offence

During the last two decades, many countries have taken steps towards introducing legislation that makes product counterfeiting a criminal offence. The liability can either be based on general matters of criminal law such as an attempt to defraud, or result from provisions in trademark legislation. Product counterfeiting will inevitably be criminalised in all countries that are committed to the TRIPs Agreement. Article 61 of the Agreement obliges contracting parties to:

"…provide for criminal procedures and penalties to be applied at least in cases of wilful trademark counterfeiting or copyright piracy on a commercial scale…"

However, despite the development in legislation, trademark owners may still face difficulties in persuading enforcement authorities to take action against counterfeiters. This is due to a number of factors: *i)* counterfeiting is often given a low priority compared to other criminal offences; *ii)* it may be difficult to uncover the full scale of a counterfeiter's activities; and *iii)* the procedural rules are often too complex to make it worthwhile to enforce the law (Clark, 1997).

Administrative action

Administrative intervention is often necessary to prevent the distribution of counterfeit goods. This is particularly important in the case of international trade in counterfeits where the customs authorities play an important role. Article 51 of the TRIPs Agreement obliges contracting parties to:

"…adopt procedures to enable a right holder, who has valid grounds for suspecting that the importation of counterfeit trademarks or pirated copyright goods may take place, to lodge an application in writing with competent authorities, administrative or judicial, for the suspension by customs authorities of the release into free circulation of such goods…"

Trademark owners face several problems in trying to initiate administrative intervention in some countries. They are often required to provide very specific information about the suspect consignment, which may be difficult to obtain and there are often high costs involved in applying for suspension.

2. OVERVIEW OF INDUSTRIES AFFECTED BY COUNTERFEITING

Various figures are quoted on the impact of counterfeiting. Unfortunately, only a few of them are based on any substantial analysis, mainly because it is so difficult to obtain accurate statistics in this field. Some estimates are made by trade associations, whereas others are put forward by journalists. Very few of the figures have changed over the last two years, a fact that undermines their reliability.

The statistics and intelligence are being used to inform governments and influence them into taking action. The US Copyright industry, including the Business Software Alliance (BSA), the International Federation of Phonographic Industry (IFPI) and the Motion Picture Association (MPA), have been groundbreaking in this field. The loss estimates are interesting but should be treated with caution since they may be on the high side.

Table 1. **Share of counterfeit products in total sales of the sector**

Sector	Share of counterfeit goods as a percentage of turnover
Watches[1]	5
Medicine[1]	6
Perfumes[2]	5
Aircraft spare parts (SUP)[2]	10
Toys[1]	12
Music[2]	33
Video[2]	50
Software[2]	43

1. Not related to any year, estimation without any account for analysis.
2. Figures for 1996, ostensibly with some analysis.

Source: Various trade associations and press.

Inaccurate data is an important problem since statistics form a basis for the decision-making process for both private companies deciding on anti counterfeiting policies and for governments seeking a mandate for enforcement of IPR rights.

Software

The problem of piracy is almost exclusively related to packaged software which is written in standard form, mass produced and sold as a commodity product “off-the-shelf”. The main software producers are based in the United States where the industry has become notorious for combating piracy, with good reason.

The industry has collected systematic information on the extent of counterfeiting. A number of reports on global software piracy have been commissioned, the latest being by the International Planning and Research Corporation (IPR), *Global Software Piracy Report. Facts and Figures, 1994-*

1996 (Business Software Alliance, 1997), hereafter referred to as the "IPR report". The IPR report encompasses the sales and piracy of packaged business-related software world-wide for 1996. It quotes somewhat different statistics from a previous report by Price Waterhouse (Business Software Alliance, 1994), presumably due to different accounting methods.

According to the IPR study, the number of new business applications, both legal and pirated, increased by 29 per cent in 1996. This is slightly less than the growth rate reported for 1995, which was 32 per cent. The data indicates that nominal losses due to piracy increased from US$12.3 billion in 1994 to US$13.3 billion in 1995 but decreased to US$11.2 billion in 1996. According to IPR, the decline in losses can be attributed to the erosion of the price of business software (Business Software Alliance, 1997).

Global piracy rates have, however, steadily decreased during the same period – from 49 per cent in 1994, to 46 per cent in 1995 and 43 per cent in 1996. Yet, as shown in the table below, rates vary significantly on a regional level. Eastern Europe has the highest piracy rate with 80 per cent, followed by the Middle East at 79 per cent. North America has the lowest rate at only 28 per cent and Western Europe the second lowest at 43 per cent (Business Software Alliance, 1997).

The Business Software Alliance (BSA) was formed by the leading software companies in 1988 as a direct response to the piracy problem. Its aim is to increase the legitimate market for software and discourage abuse of copyright-protected work around the world. It is active in 60 countries and works with government officials and industry groups to improve enforcement of IPR and educate the public on piracy.

Table 2. **Software piracy estimates, 1996**

Region	Percentage share of world-wide total	Losses US$
Eastern Europe	80	800 000
Middle East	79	300 000
Africa	70	250 000
Latin America	68	990 000
Asia/Pacific	55	3 700 000
Western Europe	43	2 600 000
North America	28	2 700 000
World-wide	**43**	**11 200 000**

Source: Business Software Alliance, 1997.

Music recordings

The world music market totalled 4 billion units valued at US$39.8 billion in 1996. The United States dominates sales with US$13 billion, followed by Japan with US$6 billion. Europe accounted for about US$13 billion of the sales, of which Germany spent about US$3.2 billion, the United Kingdom US$2.7 billion and France US$2.3 billion (International Federation of the Phonographic Industry, April 1997).

The world-wide manufacturing *capacity* for CDs has however risen from 2.5 billion units in 1992 to 9 billion units in 1996. The excess capacity doubles the demand for legitimate sales and this massive surplus has inevitably created an increase in piracy. This over-capacity is considered to be

one of the most serious threats to the recording industry (International Federation of the Phonographic Industry, September 1997).

The music industry acknowledges that modern technology has enabled an unprecedented level of production, decreased the costs of piracy and improved the quality of pirate copies. A number of developing countries are perceived to be saturated by pirated recordings creating barriers to importation by genuine producers. Furthermore, the music organisations claim to have found evidence that the manufacturing and distribution of pirate CDs has become an organised, large scale criminal activity operating on a global level (International Federation of the Phonographic Industry, September 1997).

Russia is the top priority country for combating CD piracy. It has a piracy level of 70 per cent of the total sale amounting to US$350 million per annum compared with legitimate sales worth only US$230 million. Cassette piracy is rife in Latin America and in Brazil, which is the largest market in the region, IFPI estimates the cassette piracy level to be virtually 100 per cent. In Europe, Greece has the highest level of piracy in terms of number of units, mainly because of high levels of cassette piracy. Italy, however, accounts for the highest amount of losses equalling US$105 million per year. In China, more than half of all units sold are pirated but, because of much lower prices, the pirate sales total only US$165 million, compared with legitimate sales worth US$177 million.

World-wide, recorded piracy levels have increased from about 20 per cent to more than 30 per cent of the total unit sales equalling US$5 billion in 1996 compared with about US$2 billion in 1995. The extraordinarily high increase is attributed to a change in methodology of estimating piracy losses (International Federation of the Phonographic Industry, September 1997).

The International Federation of the Phonographic Industry (IFPI) represents the majority of all record producers world-wide. It campaigns for adequate enforcement of copyright protected works and co-ordinates the anti-piracy activities of the recording industry world-wide. It lobbies governments to introduce adequate legislation and enforcement, collects information on music piracy and advises members on technical solutions for combating piracy. IFPI has also been involved in a number of investigations into the trade of infringing CDs and tapes and assists its members in preparing prosecutions.

Table 3. **Music piracy estimates, 1996**

Priority countries	**Legitimate sales Million US$**	**Pirate sales Million US$**	**Pirate sales as a percentage of total unit sales[1]**
Russia	230.0	350	70
Brazil	1 394.5	200	45
China	177.5	165	54
Italy	637.5	105	22
India	298.0	100	30
Mexico	399.3	70	50
Argentina	285.3	65	30
Saudi Arabia	100.9	35	30
Greece	128.7	22	25
Malaysia	99.9	18	20
World-wide total			
Sales (million US$)	39 800	5 000	12.5%
Units	4 000	1 500	33%

1. Mainly cassette piracy in Latin American countries.

Source: International Federation of Phonographic Industry.

Motion pictures

The market for motion pictures encompasses service providers and providers of pre-recorded cassettes. The market for service providers includes public performance, broadcast TV and cable/satellite. It is regulated by statutes with compulsory licensing, and controlled by governments and international associations that collect and distribute the royalties. However, a common method used by pirates in this market is signal theft, that is the unauthorised interception of cable and satellite signals by individuals or commercial establishments such as hotels, bars and restaurants.

Piracy rates for this sector are not available in most countries, but sporadic data show the prevalence of motion-picture piracy around the world last year. The Motion Picture Association (MPA) reports a broadcast TV piracy rate of up to 50 per cent in Greece, Russia and the Ukraine, while the former Yugoslavia had a level above 80 per cent. Cable and satellite piracy dominate the market in Russia, Bulgaria and Yugoslavia, with a piracy rate higher than 80 per cent. Interestingly, MPA reported high levels of cable and satellite piracy in some countries one wouldn't have suspected, such as Finland (40 per cent), Germany (50 per cent), Norway (20 per cent), Spain (20 per cent) and Switzerland (10 per cent). A piracy level of 50 per cent in public performance was found in Hungary, Portugal and South Africa, whiles Cyprus, France, Italy and Norway had a level of more than 20 per cent (Motion Picture Association, 1998).

The market for pre-recorded video cassettes is more difficult to control since it comprises a large number of small players. Furthermore, it is relatively easy to duplicate a video cassette and to lease or sell it. Basic technology enables video taping of television for commercial purposes, film to tape transfers of current cinema releases, and duplication in general of video cassettes. Piracy rates are bluntly recorded at about 100 per cent in many countries, particularly in Africa and South America. The piracy rates for Western European countries vary significantly between 30 per cent in Italy followed by 27 per cent in Ireland, 25 per cent in Greece and Cyprus, 22 per cent in Germany and the Netherlands, 15 per cent in Switzerland, 12 per cent in France and the United Kingdom, etc. Russia, with a piracy rate of 85 per cent, has been overtaken as a problem area by Turkey which reports a level of 95 per cent. It is widely believed that most of the pirate recordings found in Europe are imported from Turkey.

It will be interesting to see whether the soon-to-be-launched Digital Video Disks (DVDs) will have any effect on the piracy levels. DVDs employ the same principle as CDs but can store 30 times more data – enough for a digitised video of a film. Manufacturers are concerned about how easy it is to copy CDs and are incorporating a number of security features to prevent piracy. It is impossible to say in advance who will win the battle – the manufacturers or the pirates.

The United States clearly dominates the world film industry, both as producers of films and victims of piracy. The loss in potential revenue from piracy to the US film industry was estimated to be more than US$2.3 billion in 1997 (Motion Picture Association, 1998). The two main organisations combating the problem of film piracy are the Motion Picture Association (created in 1945) and the Motion Picture Association of America (created in 1922). Both organisations work closely together in a similar way since the MPA represents the world-wide film industry while the MPAA, as the name suggests, represents the US industry.

Table 4. **US motion picture piracy, 1995-97**

Seven largest countries in terms of losses	Losses in million US$ 1995	Losses in million US$ 1996	Losses in million US$ 1997
Russia	312	312	312
United States	250	250	250
Italy	294	275	220
Japan	108	142	149
China	124	120	120
Brazil	90	100	110
United Kingdom	112	100	70

Source: Motion Picture Association, 1998.

Luxury goods and fashion clothes

Theft of original ideas is the worst form of robbery in the fashion industry. A considerable amount of effort is spent in inventing distinctive designs and in establishing a trademark. Yet, it is a common attitude among enforcement agencies to treat counterfeiting of luxury goods as a "soft" crime. Some consumers buying fake luxury items do so knowingly and would not be prepared to pay the price of the genuine item. There is also a belief that counterfeits actually contribute to the marketing of the brand without causing any significant loss in profits.

This lax attitude may be a contributory factor to the increase in the counterfeiting of luxury goods in Europe. The United Kingdom and Italy, in particular, have become notorious for counterfeit fashion wear. Significant evidence of this trend came to light when UK customs officials smashed a £4.25 million racket in 1997 involving 100 000 counterfeit designer labels (HM Customs, 1997). The batches included labels for Ralph Lauren, Calvin Klein and Timberland, among others. The labels would most likely have been sewn into cheap fashion garments such as shirts, jeans and T-shirts made in the United Kingdom.

It is a common technique to import plain clothing in one batch, produce the labels on-site or import them in another batch at another date, and then attach the labels over night close to the point of sale. This makes it much more difficult to detect the fakes while they are still in sufficiently large quantities to justify action.

Counterfeit clothing, particularly from Italy, is becoming very difficult to combat. In the past a counterfeit shirt would often fall apart or lose colour after the first wash, but there has been a significant improvement in the quality of fakes. Very often the fakes are made by the same manufacturer that is contracted to produce the original items. The copies are therefore indistinguishable from the genuine item, but are sold for less than half the price. These "over-runs", as they are called, are difficult to stop for the trademark owner.

There is no international trade association for the fashion clothing industry. Most luxury brand owners employ in-house anti-counterfeiting officers and are members of national pan-industry anti-counterfeiting associations, such as the *Comité Colbert* and the *Union des Fabricants*.

Sportswear

Whereas the 1980s was the decade of the French fashion houses with glamour and beauty salons, the 1990s has, if anything, been the decade of health and fitness. This has been promoted at all levels, including everything from healthy eating, fitness centres and hiking holidays. The sportswear industry recognised this trend early and has spent large amounts of money on marketing a "sporty" lifestyle for their clothes.

The inevitable drawback with the sportswear industry turning into a fashion industry is that it attracts counterfeiters. Statistics on seizures by the US customs in 1994 relating to IPR infringements shows that counterfeit sporting goods accounted for 10 per cent of all goods seized that year. However, the "sporting goods" category was not specified at all in the list of seizures for 1997, indicating that the amounts seized vary significantly from year to year.

Counterfeit sportswear is relatively easy to produce for a number of reasons. First, international trade in counterfeit clothing is relatively straightforward since the counterfeiter can import plain clothing and attach logos close to the point of sale. Another method that is becoming increasingly common, is to use grey-market channels. It is not uncommon for parallel traders to send genuine samples to the importer and mix the consignment with counterfeits.

Second, the sale of counterfeit sportswear is closely connected to large events. Concerts and championships or other major events normally attract organised counterfeiters who set up trade around the venues. The vendors are very mobile and carry small stocks, making police action ineffective. Police investigations in Europe have found evidence of international rackets specialising in selling fakes at large events.

Third, the main target customer for counterfeit sportswear are youngsters who are the most willing to buy fakes. A recent poll in the United Kingdom on public attitudes to counterfeiting showed that 40 per cent of consumers knowingly go shopping for fakes and of these, more than 50 per cent were between the ages of 15 to 24 (Anti-counterfeiting Group, 1997).

Large-scale counterfeiters of sportswear generally target only a few brands that are market leaders, such as Adidas and Nike. These companies have in-house facilities to deal with counterfeits. While there is no formal agreement within the industry to join forces in combating counterfeiting, there is significant informal information exchange between the various companies.

Perfumes

The perfume manufacturing market is characterised by a few large companies with strong brands at the top end of the price range and a large number of small cheap branded perfume manufacturers. The main costs for the top-of-the-range manufacturers include marketing and brand protection. This segment of the industry is dominated by French fashion houses, where the perfumes are not only a source of revenue, but are also considered important for marketing and brand positioning. Throughout the rest of the world, the American brands are popular targets for counterfeits, particularly Calvin Klein.

The distribution of perfumes is normally restricted to exclusive retailers and cause price stability. Counterfeiting is a well-advertised problem in this industry. Ninety per cent of fakes are sold on the

grey market through alternative channels such as street traders and smaller shops at bargain prices. Most consumers buying these fakes are aware that it is not the genuine item and that the product is of a lower quality. It is very common, however, for the trader to pretend that the goods are stolen in order to deceive the consumer about the quality.

There are generally three types of fake perfumes: those displaying a reasonable standard of fake packaging; look-alikes which are similar, but not identical; and cheap replicas claiming a false origin. The industry estimated their losses in 1996 at more than 5 per cent of annual turnover and spent on average 1 to 2 per cent of their annual turnover in combating the illicit trade (Comité Colbert, 1997).

According to a 1995 survey by the French Institute of Industrial Statistics (*Service des Statistiques Industrielles*, SESSI), more than 80 per cent of French perfume companies have experienced problems with counterfeiting. The same survey indicates that seven out of ten counterfeit luxury goods are of French products (Service des Statistiques Industrielles, 1996).

The French Federation of Perfume Manufacturers is the main industry representative. This organisation assists members in investigating fakes, lobbies the French government for adequate intellectual property protection and works as an information source for the industry.

Toys

The toy industry can be divided into two segments, traditional toys and electronic toys, the latter being the fastest increasing segment. The industry for traditional toys is dominated by a few large manufacturers who also act as distributors. Counterfeiting of toys is slightly different from “normal” trademark infringement. It often happens that the design of the product is copied and sold under a similar, but not identical, trademark. This is harder to combat for the trademark owners, especially in Asia where design protection is not as strong as trademark protection.

Counterfeiting of toys, either through illegal copying or the production of near copies, is of increasing concern for the industry. Not only does it cause financial losses, more importantly it involves serious health and safety risks to small children. It is estimated that counterfeit toys account for 12 per cent of the European toy market. The main problem area for the toy industry is China. Most toy manufacturers have located their production in a few regions in China. These regions are now sources for genuine products as well as for counterfeit toys. Another country of concern is Turkey, where there is less production of genuine toys and more of counterfeits.

Toy Industries of Europe (TIE) was founded in 1990 to promote the interests of the European toy industry to the European institutions. TIE works mainly as a lobby group and has taken an active part in refining the intellectual property laws within the European Union.

Electronic toys, particularly computer games, are one of the fastest growing segments in the toy industry. The main manufacturers of these games are based in South-East Asia and the United States, and this segment overlaps the computer industry and the traditional toy industry. The computer industry estimates that counterfeiting in Hong Kong (China)’s game sector alone is costing the industry US$90 million in lost revenue per year. The manufacturing itself is believed to be carried out in China, the CDs are then smuggled into Hong Kong (China) and slipped into pre-printed sleeves in the shops. CDs are extraordinarily easy to smuggle due to their size and adaptability.

Nintendo, the largest producer of video game products, claims that China, Chinese Taipei and Hong Kong (China) are the largest sources of counterfeit video games in the world. Trade in pirated software is said to be carried out through cartels with connections in all three countries and the United States. The operations of these cartels cost some US$800 million in losses to the US market for Nintendo in 1996 (Reuters News Service, 1990-97).

Aircraft components

Although very stringent controls exist for the supply of spare aircraft parts, there have been a number of incidents of aeroplane crashes caused by fake components.

Components for aircraft, such as washers, bolts, nuts and screws, are made by a large number of small companies. The supply chain is, in theory, controlled strictly by Defence Departments as well as by non-governmental trade associations but, in practice, there have been a number of incidents where counterfeit components have found their way into the supply chain. This has the potential to cause huge problems since thousands of parts are used on each aircraft and it takes only one fake component to lead to a disaster.

The Far East is commonly pinpointed by the US aviation industry as the problem area. In fact, cases and seizures indicate that the United States has had more reported incidents on domestically produced counterfeit aircraft parts than imports from any other region (Jackson, 1994).

Industry experts believe that up to 10 per cent of spare parts in the US are Suspected Unapproved Parts (SUPs). This includes parts that are either counterfeit, stolen or, as in the majority of cases, lack the right paperwork. The US Department of Transport has estimated that there could be up to US$1 billion worth of “unapproved parts” in the warehouses of US airlines and parts distributors. The bogus spares industry is believed to attract criminals because of its high profits and low risk. Whilst a genuine nut is costly to produce and may sell for US$400, a counterfeit can be manufactured for a fraction of the amount and sold on the black market for a high profit. The black market for aircraft parts in the United States is virtually unregulated and includes more than 5 000 brokers (Jackson, 1994).

In 1990, the Department of Transport launched an investigation into SUPs. The agents were authorised to investigate airlines, suppliers, manufacturers, brokers, FAA Approved Repair Stations, and the FAA itself. In the year before “prioritisation” only nine SUPs were reported throughout the United States. In 1991, that figure increased to 52 and the following year it soared to 362, followed in 1994 by 411 SUP reports, each of them potentially dangerous. In 1995 the figure came to 317, and within the first half of 1996 the total exceeded 220 (*Automotive News*, 1997).

The FBI has identified four basic fraud schemes involving SUPs (*Automotive News*, 1997):

- ◊ Affixing a yellow FAA airworthiness tag, which certifies a part has been rebuilt or overhauled, to a used part on which no work has been done.
- ◊ Making a part based on manufacturer specifications but with inferior material, so it resembles the genuine item without meeting flight specifications or having been tested.
- ◊ Buying, then reselling, production over-runs from part makers that supply major aircraft manufacturers. Such parts may be airworthy, but they can also be factory rejects.

- ◊ Obtaining parts that are fatigued, worn or damaged to the point of being unworkable and selling them as refurbished.

Spare parts and car accessories

Many motor companies have only recently started to discuss the problems of large-scale counterfeiting and then only in relation to unauthorised spare parts. Unauthorised spare parts include:

- ◊ Over-runs by authorised suppliers, including non-branded genuine parts that are sold directly from the supplier to the dealer without the consent of the brand owner.
- ◊ Counterfeit parts – including trademark-infringing spare parts and accessories.
- ◊ Grey-market imports – including genuine parts that have been diverted from one market to another without the consent of the brand owner.
- ◊ Copy parts by independent suppliers. It is legitimate to sell these if they are of matching quality, do not bear an infringing trademark and the consumer is notified that the part is unauthorised.

Various products have been subject to counterfeiting, such as car mats, wheel trims, lamps, mud flaps and electrical parts. In general, counterfeiters target short-duration products, standard parts that are sold off-the-shelf and can be fitted to different models and parts with low per-unit costs since they are less likely to carry any security device.

The motor industry estimates that it loses US$12 billion from sales in unauthorised parts, including counterfeits, of which the United States accounts for US$3 billion and Europe for the largest share of the remaining US$9 billion (*Automotive Marketing*, 1998). (It should be noted that this estimate has remained the same since 1993.) General Motors believes that the company and its suppliers lose some US$1.2 billion annually from lost sales to counterfeit parts. In France, Peugeot claims to lose FF 400 million, and Renault estimates losses of between FF 600 and 900 million per annum.

The main production areas have been named as Italy, Spain and Portugal in Europe, and Turkey, Chinese Taipei, Singapore and Iran.

The industry has no formal organisation devoted to combating counterfeiting. Ford in Germany and the United Kingdom, General Motors in the United States and Peugeot-Renault in France are very active and have in-house anti-counterfeiting programmes. Some of the other motor manufacturers are looking into solutions.

Pharmaceuticals

Counterfeit pharmaceuticals have far-reaching public health implications and have therefore attracted considerable concern from public bodies, in particular from the World Health Organisation (WHO).

Counterfeit medical products are defined by the WHO as ones that are “deliberately and fraudulently mislabelled with respect to identity and/or source” (WHO/IFPMA, 1992). The products

may include correct ingredients in incorrect quantities or composed according to a wrong formula, non-active substances all together, toxic substance, or correct content but in fake packaging.

Mainly affected are the developing countries with weak drug regulatory control and enforcement. The problem is further exacerbated by a number of other factors: scarcity and/or erratic supply of basic medicines, uncontrolled distribution chains, large price differentials between genuine and counterfeit medicines, lack of effective intellectual property right protection, lack of regard for quality assurance and corruption in the health-care system.

In general, most developing countries have a local production of generic drugs that infringe on patents owned by international pharmaceutical companies simply because intellectual property protection is not available for pharmaceuticals in these countries. Italy, the Lebanon, India, Pakistan, Argentina, Mexico and Brazil have, furthermore, been pointed out as sources of counterfeit drugs distributed internationally.

Counterfeiting of drugs has only been reported since the beginning of the 1980s and gained press coverage only in this decade. The WHO has a team devoted to improving protection in the developing world and intelligence gathering. However, companies are reluctant to release information on incidences of counterfeiting of their products for fear of undermining sales of, and confidence in, their legitimate products.

The main industry action in this field is the Pharmaceutical Security Initiative (PSI). It was created in 1996 and operates from Rome.

Estimating the financial impact of counterfeit pharmaceuticals is very difficult. The total losses for the legitimate chemical and pharmaceutical industry have been estimated in excess of US$17 billion (Jayasuriya, 1997). Developing countries account for the largest shares, with up to 60 per cent of all medicine sold in some African countries being fake. In Nigeria, for example, only a quarter of some 500 samples purchased from street vendors appeared to be genuine (WHO/IFPMA, 1992).

Some examples of counterfeit medicines found in EU Member States include Selokeen and Losec (Astra), Zantac (Glaxo) and Fansidar (Welcome). In the case of Zantac, the trail ran from raw material to drugs on the shelf through at least four countries. The raw material came from Turkey, the product was manufactured in Greece and then went through a Swiss broker to a Dutch importer. The more complex the path through the supply chain, the easier it is for a counterfeit product to enter the system.

3. GEOGRAPHICAL SPREAD OF COUNTERFEIT PRODUCTS

The European Commission surveyed seizures by European Union Customs Authorities between July 1995 and June 1997. Of 4 133 cases reported, the vast majority of products arrived from Poland (740) and Thailand (724). Turkey and the United States were also very common sources, with 497 and 438 seizures. Most cases reported from Spain involved products arriving from the United States. In Germany, most cases involved, not surprisingly, products arriving from Poland, Turkey and the Czech Republic (EC, 1998).

Table 5. **Origins of counterfeits seized by EU customs services**
July 1995 to June 1997

Country	Percentage share
Poland	17.9
Thailand	17.5
Turkey	12.0
United States	10.5
Hong Kong (China)	5.8
China	4.7
Czech Republic	3.6
Korea	2.3
Indonesia	1.2
Chinese Taipei	1.1
Total	**100.0**

Source: Report from the European Commission, Document 98/0018 (ACG), 28 January 1998.

The following maps indicate the sources of some counterfeit products. The first two maps show counterfeit goods seized by the US customs in 1996 and 1997 from the five most common countries of origin. China was the main supplier of IPR violating merchandise by value, and Korea ranked first by number of seizures. The number of seizures in 1996 involving China was only 105 but the value amounted to more than US$5 million, compared with 645 seizures from Korea totalling the same value. The total value of 250 seizures involving goods from China in 1997 amounted to US$14.5 million, which can be compared with 460 seizures of Korean consignments totalling US$3.6 million (US Customs Service, 1998).

The maps list the top five commodities from each country. Overall, media was the top commodity seized for IPR violation, followed by wearing apparel. Following a campaign by Underwriters Laboratories (UL) in 1997, aimed at focusing enforcement towards the interception of lighting and power supplies bearing fraudulent UL marks, these products became the third largest commodity seized (US Customs Service, 1998).

The third map shows the origin of some IPR-infringing goods seized by customs authorities of the European Union between July 1995 and June 1997. The picture is not exhaustive but includes a few significant seizures during that period (EC, 1998).

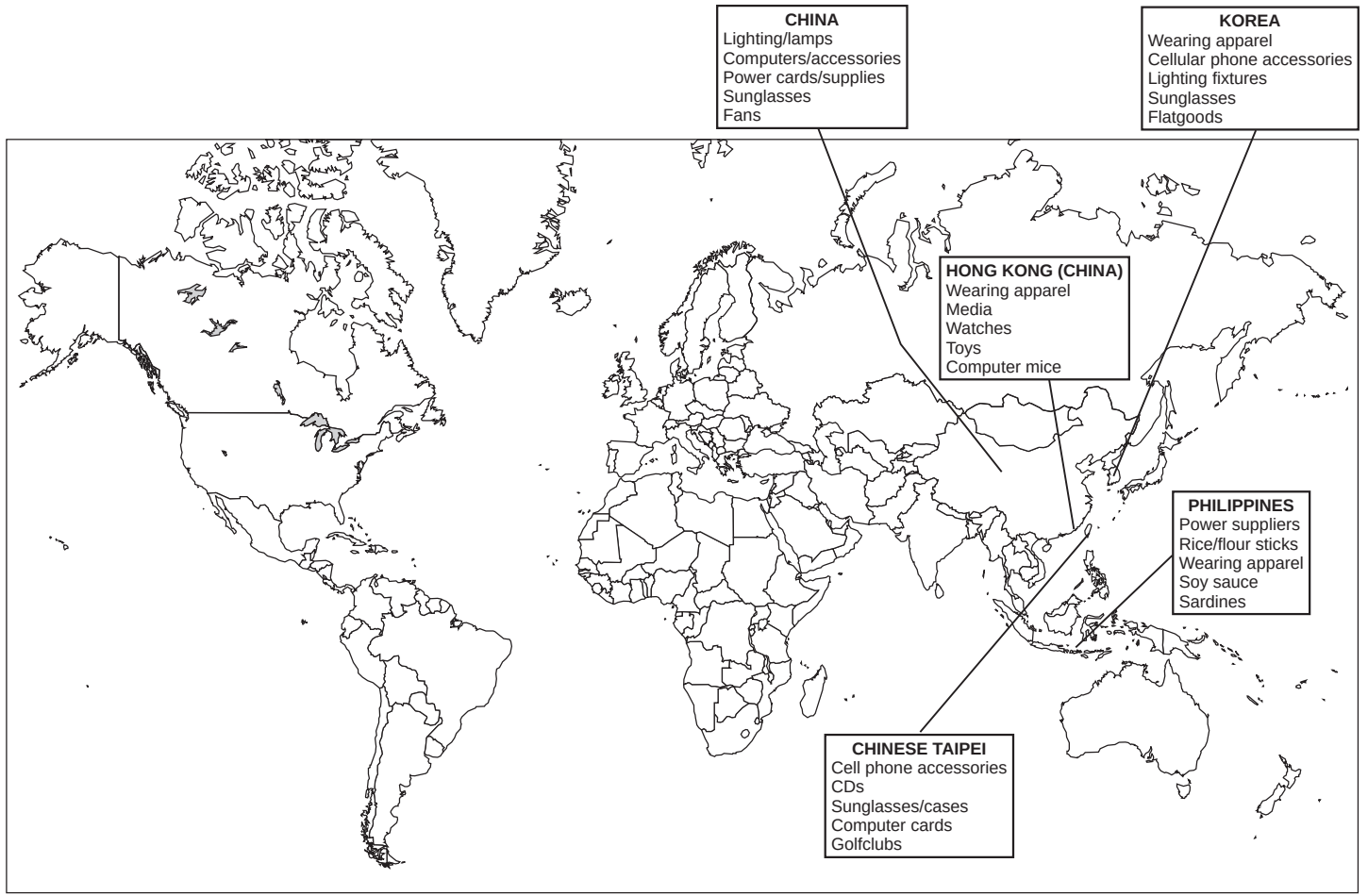
Map 1. **Geographical origin of some IPR-infringing goods seized by US customs in 1996**

Top 5 products from top 5 countries

Source: United States Customs Service, 10 February 1998.

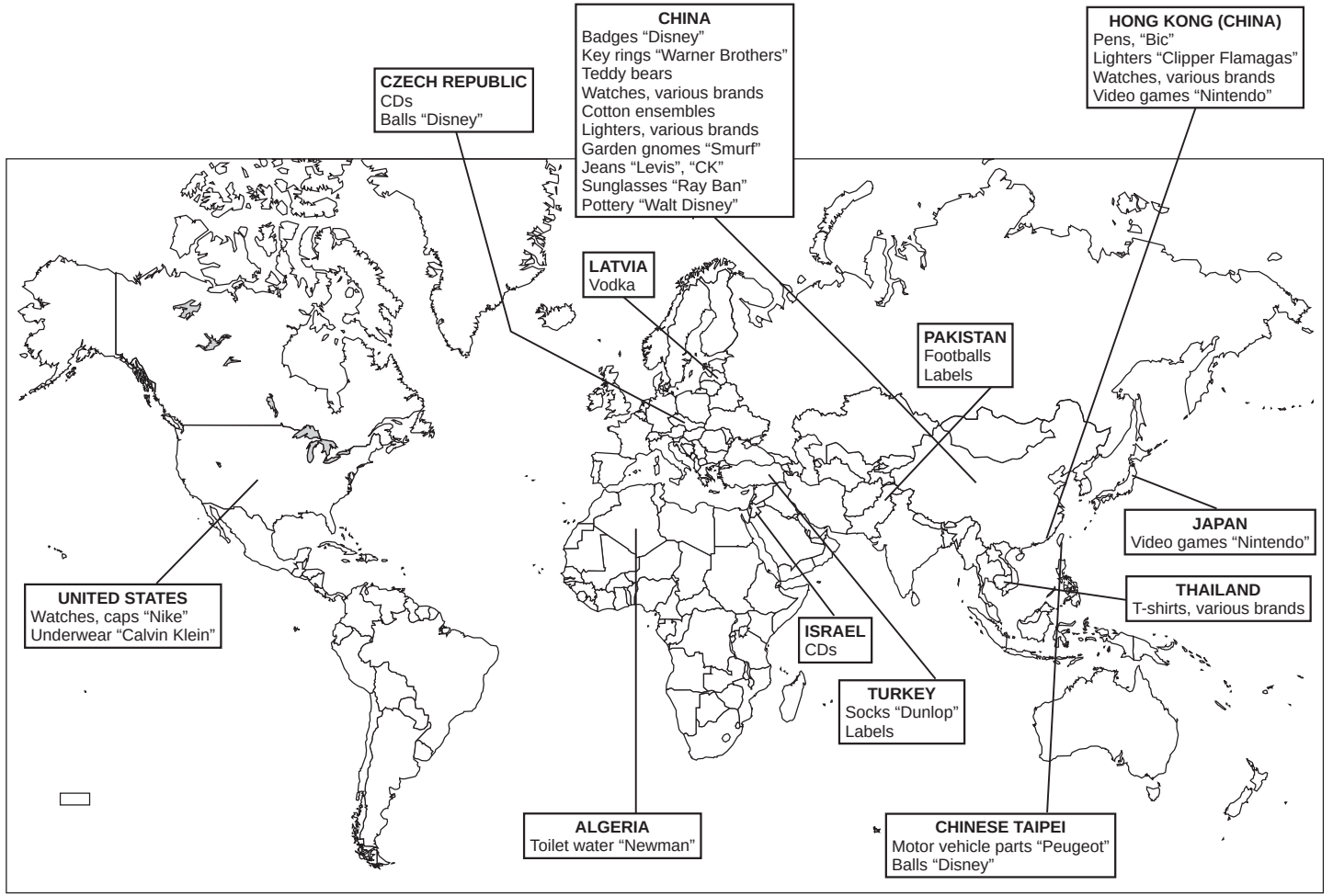
Map 2. **Geographical origin of some IPR-infringing goods seized by US customs in 1997**

Top 5 products from top 5 countries



Source: United States Customs Service, 10 February 1998.

Map 3. **Geographical origin of some IPR-infringing goods seized by EU customs, July 95-June 97**



Source: European Commission, 28 January 1998.

4. THE IMPACT OF COUNTERFEITING

The costs

Costs to the right holder

Industry world-wide loses billions of dollars every year to counterfeiters. These costs impact on victim countries in a number of different ways. First of all, industries which find themselves in direct competition with counterfeiters suffer a *direct loss in sales*. Indeed, some markets are even dominated by counterfeiters, creating barriers of entry for the producers of the genuine product. Some would argue that the buyers of the fakes would not have bought the genuine item but that is a very narrow argument and can only apply to a small segment of luxury goods. Many counterfeit products today are of higher quality and compete directly with the genuine items.

In addition, consumers who are deceived into believing that they bought a genuine article when it was in fact a fake, blame the manufacturer of the genuine product when it fails, creating a *loss of goodwill*. Even cheaper and obvious copies that are bought in good faith represent a serious threat to the company that wants its brands associated with quality and exclusivity.

Thirdly, beside direct losses of sales and goodwill, one should not forget the expenditure involved in *protecting and enforcing* intellectual property rights. The right owner becomes involved in costly investigations and litigation when combating counterfeiters and may also have to spend further sums on product protection. The budget for anti-counterfeiting is rarely well defined within an organisation, but spans across several departments such as marketing, human resources, product development and legal departments.

Costs to countries where counterfeiting takes place

Such countries suffer both tangible and intangible *losses*. First, foreign producers of reputable products become reluctant to manufacture their products in countries where counterfeiting is rife as they cannot rely on the enforcement of their intellectual property rights. Hence, such countries not only *lose direct foreign investment* but also *miss out on foreign know-how*.

Second, if many products from such countries, including genuine ones, gain a reputation of being of poor quality, this will cause export losses which in turn implies both *job losses* and *loss of foreign exchange*. It could be argued that the counterfeiting industry creates jobs but these jobs are often poorly paid, often involve substandard working conditions and sometimes use child labour.

Third, the foundation for new business development in a country is the existence of a legal system to protect the rights of the entrepreneur and to promote fair competition. The prevalence of

counterfeiters in a market *discourages inventiveness* in that country since it deters honest producers from investing resources in new products and market development.

A further direct loss for the government of countries that become havens for counterfeiters, are *tax losses*, since the counterfeits are normally sold through clandestine channels and counterfeiters are not generally keen to pay tax on their ill-gotten gains. Fiscal losses are increasingly shown to justify action by enforcement officials.

Costs to countries where counterfeits are sold

Countries promoting tougher enforcement of intellectual property rights in the world have a strong case for doing so. The economic costs of counterfeiting for such "victim" countries include *job losses, missed sales opportunities and lost tax revenues*.

In the long run counterfeiting *discourages investment in product development* since a company will not get all the benefit from its investment. The governments of countries where counterfeits are sold will also have to expend increasing amounts of money in funding police and other *investigation and enforcement* operations. Furthermore, the *judicial authorities*, including the courts and prison service, need to spend additional time and money in sentencing and dealing with counterfeiters.

Social costs

Ultimately, it is the consumer who pays the cost of unfair competition. Although many consumers believe they are getting a bargain when they buy counterfeits, the actual value of the product is normally much lower. Hence, they end up *paying an excessive price for an inferior product*.

The *inferior quality of many counterfeits*, particularly those relating to *health and safety*, have had disastrous effects. It is no longer rare to find counterfeit parts in aircraft and other vehicles causing death and injuries, or counterfeit pharmaceuticals in hospitals. Workers in factories where counterfeits are produced are frequently *exploited*. They often work in a poor working environment and are repeatedly exposed to health and safety risks. In addition, they are generally poorly paid.

Counterfeiting has attracted both organised and petty criminals who have not only derived huge profits from this trade but have also used it, both as a means to invest the proceeds of crime and to *finance other crimes*.

Estimating the problem

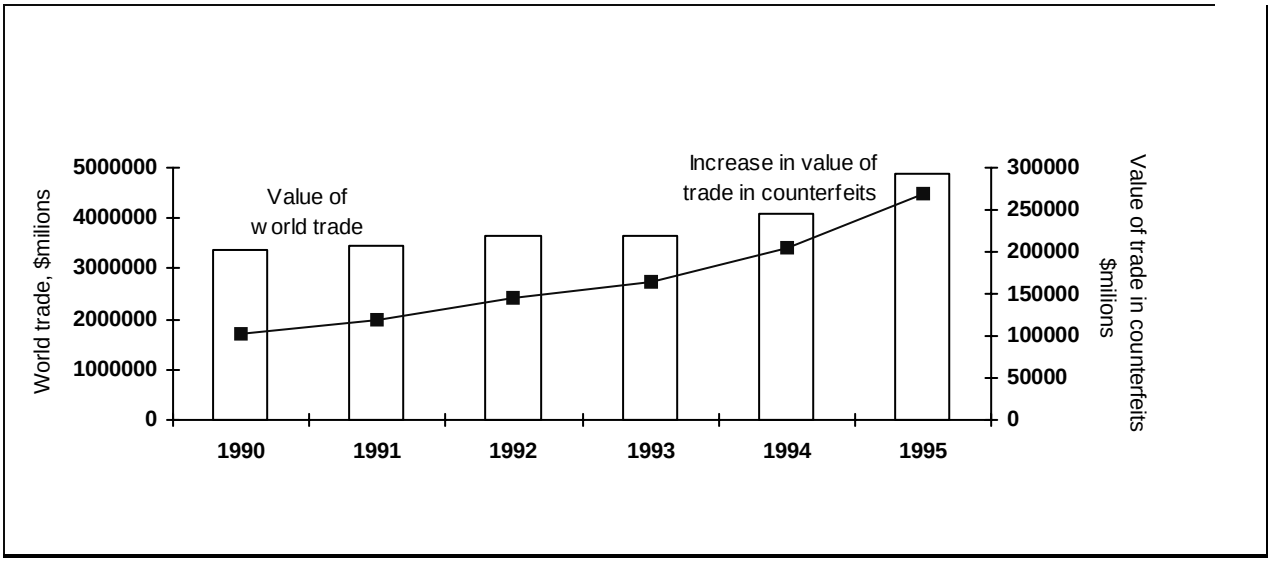
Aggregated losses

Counterfeiting is a severe problem and the common perception is that it is increasing. However, it is virtually impossible to find accurate statistics to substantiate these perceptions, not least because of the clandestine nature of the activity. The overall costs of counterfeiting in the world today are normally estimated to be 5-7 per cent of world trade. There is no substantial aggregated data to support the high percentages, but the figures are now accepted and used to illustrate the extent of the counterfeiting problem.

In 1997, the Counterfeiting Intelligence Bureau (CIB) of the International Chamber of Commerce (ICC) calculated the nominal value of the estimated share of counterfeit goods as a percentage of world trade (ICC Counterfeiting Intelligence Bureau, 1997). They used aggregated data on total world trade provided by the World Trade Organisation and took the general assumption that counterfeiting has increased from 3 per cent in 1990 to more than 5 per cent in 1995, giving an annual average of 0.5 per cent.

With world merchandise export levels of nearly US$5 000 billion in 1995, 5 per cent would represent approximately US$250 billion for that year (WTO, 1996). In 1990, world trade was worth almost US$3 400 billion, and the value of counterfeit goods was assumed to be around 3 per cent of world trade, which gives losses of approximately US$100 million per annum. This implies that, while world trade increased by about 47 per cent during the five-year period 1990-95, the value of trade in counterfeit goods increased by more than 150 per cent over the same period.

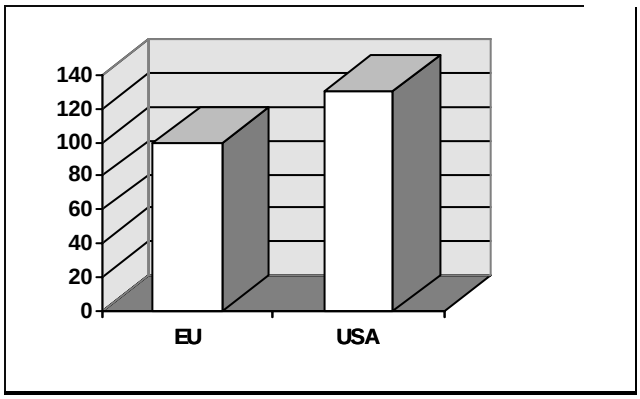
Figure 1. **Increase in value of counterfeiting as a percentage of world trade**



Source: Compiled by the Counterfeiting Intelligence Bureau of the ICC, world trade figures provided by the WTO.

Direct losses in sales are sometimes referred to in terms of job losses, which is actually just another way of saying the same thing. The numbers are derived by taking the loss of sales of a sector or a company due to counterfeiting, and calculating the number of additional people that could have been employed with that revenue. Estimates in the United States and Europe imply that more than 200 000 jobs are lost due to counterfeiting in these two regions alone.

Figure 2. **Job losses due to counterfeiting**

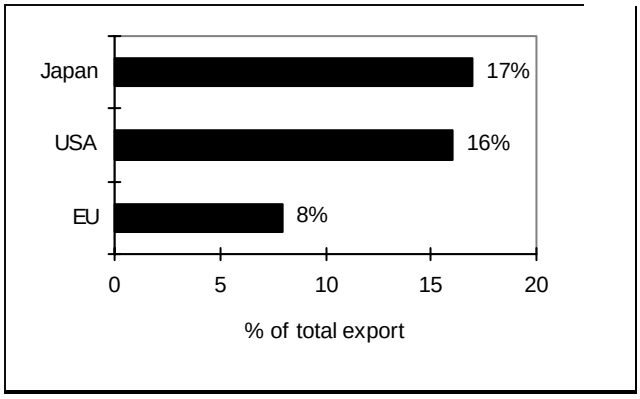


Source: European Commission, US International Trade Commission, 1996.

Attempts have also been made to estimate the losses in terms of loss of exports.

Figure 3. **Loss of exports due to counterfeiting**

As a percentage of total exports



Source: La Tribune des Fossés, 16 February 1995.

Some factors behind the rapid increase in counterfeiting

While counterfeiting existed prior to industrial revolution, large-scale counterfeiting is a post-industrial phenomenon and the modern wave of international trade in counterfeits originated in the mid-1960s. A number of factors can be attributed to the rapid increase experienced during the last few decades:

Advances in technology

New technology has not only benefited manufacturers of genuine products, but also counterfeiters. The photocopying machine is, for example, considered to be one of the main tools in a counterfeiter's tool box. New techniques have furthermore enabled counterfeiting of what were

normally considered as “high-tech” products, too complicated to fake. Pharmaceuticals, electronic components and rescue equipment are some examples. The counterfeiter can demand a higher price for his low-cost products since these products have a high value-added element.

Increased international trade

International trade, including trade in counterfeit products, has increased dramatically over the last few decades. Virtually all regions are both production and consumption areas for counterfeit products. Although an expansion of border measures would enhance the means of combating international trade in counterfeit goods, it is unlikely to produce significant results unless matched by a corresponding increase in the resources available to customs authorities to devote to anti-counterfeiting work. It is noteworthy that, despite inspecting only 3 per cent of shipments, US Customs confiscated more than US$37 million of counterfeit goods in 1994 alone (US Customs Service, 1997).

In view of the world-wide growth of regional economic integration (*e.g.* the European Union and the North American Free Trade Agreement), the effects of any expansion in border measures to combat counterfeiting have been offset by a more general trend in favour of dismantling border controls to ease the flow of international trade.

Emerging markets

A number of economies that were previously controlled are now being transformed into free market economies. Unfortunately, the speed of transformation has been somewhat too fast for the enforcement agencies, particularly in Eastern Europe and the former Soviet Union. These markets are now emerging as both large producers and consumers of fakes.

Although counterfeiting occurs more or less throughout the world, East Asia, including China, is still pinpointed as the main source of fakes. This region has increased its relative share in world trade, implying increased exports of counterfeits along with genuine products.

Emerging products

The share of semi-manufactured and manufactured products have increased world trade at the expense of trade in raw materials. Manufacturing now accounts for 75 per cent of total world exports. Processed, high value-added goods are naturally also more likely to be counterfeited. Electronic products, such as software and music recordings, are not included in world trade figures. These are rapidly becoming the products most affected by counterfeiting.

It is difficult to predict whether counterfeiting will decrease or increase in the foreseeable future. On the one hand, technological development is enabling counterfeiters to produce fakes relatively cheaply and easily. The distribution of fakes is becoming increasingly sophisticated through international networks and the range of products targeted has widened, increasing the total market for fakes. On the other hand, there is a greater awareness among enforcement agencies and the public about the health and safety risks of fakes, intellectual property protection has been improved throughout the world and companies are able to protect their products with increasingly sophisticated anti-counterfeiting technologies

Difficulties in measuring the market for fakes

Whereas the arguments support the general perception of an increase in counterfeiting activity, they cannot really be empirically tested. Estimates are difficult, mainly due to the following two difficulties:

- ◊ *Measuring production.* Counterfeiting is a clandestine activity and fakes are produced, distributed and sold outside the recorded market. Virtually no counterfeiters register their operations or pay tax. Therefore, the production of fakes cannot be quantified.
- ◊ *Measuring sales.* The losses to producers of genuine items cannot be quantified by subtracting the number of items sold from the total number of units that could be absorbed by the market, *i.e.* the total market size. The market for genuine products and that for counterfeits should be treated as two separate markets, where the tools to measure the former will not necessarily apply to the latter.

Other aspects

There have been very few attempts to discuss the economic aspects of counterfeiting for the following indirect reasons:

- ◊ Traditionally, the people involved in this field have been lawyers, marketing personnel or security officers who are practitioners and not always interested in the economic aspects of counterfeiting or aggregated statistics.
- ◊ Many of the anti-counterfeiting organisations are lobby groups and have an incentive to present exaggerated figures that may bias the true picture.
- ◊ This is inevitably a grey area and a true calculation of the total effects of counterfeiting should not only include the costs but also the benefits. However odd it might sound, counterfeiting does contribute to some extent to the overall economy of the country where it takes place.

Private estimates

Is there a role model?

The International Intellectual Property Alliance (IIPA) compiled detailed piracy figures for its members and an account of piracy losses and piracy levels (International Intellectual Property Alliance, 1996).

These calculations use such information as legitimate sales of copyright protected products, sales of hardware (*e.g.* VCRs and PCs), and the estimated sales of unauthorised products. They do not indicate how the unauthorised sales are estimated, only that the information is gathered through staff, representatives and agents world-wide. Piracy losses are only related to the US-based copyright industry and the losses are included in the country of manufacture rather than in the country of ultimate sale.

Piracy levels refer to the share of a country's market that consists of pirate sales. A piracy level of 33 per cent means that more than three in every ten copies used are illegitimate. Piracy levels are believed to provide a more accurate figure of the scope of piracy in a given country than do absolute losses. A country with a high degree of enforcement will have a lower piracy level but may show high losses due to the large size of market and vice versa.

Estimating software piracy

The software industry has become well-known for its accurate figures on piracy losses. Their calculations are normally based on the sale of hardware and an assumption that each computer will, on average, use at least three software packages.

The Business Software Alliance commissioned Price Waterhouse to survey the *Contribution of the Packaged Business Software Industry to the European Economies* (Business Software Alliance, 1994). The report estimates the costs of piracy in terms of losses in employment and fiscal contribution in Western Europe. The estimations are based on the size of the total market for business software in Western Europe, the market share of BSA members and growth estimations.

Employment figures for the packaged business software sector were calculated by assuming a gross margin on retail distribution and other related activities, assuming furthermore that a percentage of this gross margin represents the costs of employment, calculating the gross wage from these assumptions and dividing it by an estimated average gross earning in the distribution sector.

The number of jobs that could be created is derived by assuming that income from employment represents about 45 per cent of total final expenditure; dividing this figure by the number of employees gives the average gross earnings. The total sales of the business software industry are then multiplied by 45 per cent to obtain the income from direct employment generated by these sales, and divided by the average gross earnings to get the number of jobs generated by the sales.

The tax contribution from the business software industry to the governments of Europe were estimated by adding corporate taxes paid by the relevant companies, VAT receipts from their sales, personal taxes and contributions to social security paid by the number of people that could be employed in the absence of piracy.

The average level of illegal copying of packaged business applications software is arrived at by comparing industry data on actual software sales to hardware sales. This produces a ratio of applications packages sold per personal computer. The industry assumes that between 3.0 and 3.6 software application packages are used per PC in each country. By comparing the ratio of sold applications with the assumed average, BSA can estimate the piracy level in a specific country. The losses from piracy are simply calculated by multiplying the average price of a software package with the difference between sales of software packages and software in use.

The job losses are derived from the number of jobs that could have been generated according to the model described above. This is the most detailed model that has been presented to calculate piracy losses. However, there are a number of drawbacks in the model which makes it difficult to accept:

- ◊ it is based on a very general assumption of the number of applications that are used with each piece of hardware;

- ◊ it is static and does not take into account the dynamics of the market;
- ◊ it is likely to exaggerate the losses since the market segment for genuine software is not necessarily identical to that for illegal copies in terms of consumers' willingness to pay, etc.;
- ◊ it attributes all losses in sales to counterfeiting, although a significant share may be unauthorised imports from other countries and nevertheless genuine;
- ◊ the number of jobs generated is unlikely to be in direct proportion to sales.

However, the estimations by the software industry are very typical for most copyright-protected industry, including the music and motion picture industries.

5. PROTECTION AGAINST COUNTERFEITING

With counterfeiting soaring to US$250 billion per annum, more and more companies are taking a proactive role in preventing their products from being counterfeited. It would be unrealistic to expect any measures to eliminate counterfeiting forever, but the aim should be to make it unattractive for the fraudsters to target the company's products.

Safeguards against counterfeiting within private organisations have three main ingredients: anti-counterfeiting policy, technologies and legal enforcement.

Anti-counterfeiting policy

Most companies that market their products internationally have experienced some problems with counterfeiting. Yet, for many, it is only during the last few years that they have formulated any systematic anti-counterfeiting policy. Strategies are now discussed in wider groups and most conferences on product counterfeiting will have at least one company sharing its experiences of combating counterfeiting. Anti-counterfeiting work is regarded as goodwill raising, and more and more companies are seeing the advantages of publicising their efforts. It is not only the most heavily counterfeited industries, such as software and music, but also companies from the wine and spirits and motor industries that participate at these conferences.

Due diligence

The concept of due diligence is most developed in the finance sector in the preparation of financial documents. It involves taking steps to ensure, as far as is reasonable, that if challenged, it can be proved that all due care was in fact taken. It goes beyond the duty of care into strict regulatory mechanisms involving not only the basic care theme but also a series of well-defined procedures and tests (ICC International Maritime Bureau, 1994).

An obligation for manufacturers to exercise due diligence can be seen as a legal tool for regulators and enforcement agencies to ensure proper procedures of affirmative care have been taken. This is particularly important where counterfeits can cause injuries and health hazards, such as pharmaceuticals, spirits and motor parts, etc. Here, due diligence not only provides a shield for liability, but also protection against loss of reputation and adverse public opinion.

The series of procedures that form the basis of due diligence are in fact proactive measures implemented to reduce the negative effects of counterfeiting. These measures reduce the risk of counterfeiting in the first instance, as well as enabling the company to react much faster should it occur. Procedures such as training, internal control and adherence to accepted codes of practice are likely to have commercial benefits. In order to implement a due diligence strategy, an organisation

must comprehend almost every risk-related function that it faces and implement response procedures accordingly. The concept, therefore, enters into the realm of risk management.

Proper labelling, overt anti-counterfeiting technologies and training in recognising counterfeits would, for example, significantly assist officials enforcing the intellectual property rights of the trademark owners. It is a well-known fact that customs authorities fail to seize large amounts of counterfeits either because they do not know how to recognise the fakes, or because the process of gathering statements from trademark owners is too time-consuming.

In conclusion, there are a number of factors supporting the introduction of due diligence in the field of anti-counterfeiting:

- ◊ Only the manufacturer of the genuine product knows whether an item is fake or genuine. Therefore, it makes sense that manufacturers should be obliged to assist in identifying copies of their products.
- ◊ The financial burden is shifted to the right holder, who is usually the financially stronger party compared with enforcement agencies. Many companies are already financing training and the setting up of data bases for enforcement agencies.
- ◊ The diversity of products targeted by counterfeiters will require a more proactive approach from the industry groups in order to obtain protection for their specific products. For the moment, virtually all goods seized by customs in the United Kingdom are clothing and encompass a limited number of the most well-known brands.
- ◊ Increased competition in the market for genuine goods makes it necessary for the company to maintain consumer confidence. Too many competing substitutes are ready to replace the market leader as soon as consumers lose confidence in that brand.

Anti-counterfeiting technologies

Overview

Technologies are increasingly employed to protect and authenticate products. In the past, this field was somewhat neglected partly because of the limited availability of suitable technologies as well as the perception that the implementation of the technologies would not be cost-effective. However, this trend has changed with more victims of counterfeiting becoming aware of the potential that technological solutions hold out and the falling costs of implementing these.

The overriding requirement of any anti-counterfeiting system is to change the risk-return profile for the counterfeiters – raising the risk and thereby minimising the return. The counterfeiter will carry out some form of direct or indirect cost-benefit analysis before embarking on criminal enterprises. The total cost of crime for a counterfeiter includes, beside the direct costs of producing and distributing the fakes, an indirect risk factor. The risk factor weighs the risk of being caught, the probability of being convicted, and the severity of any penalties likely to be imposed. The risk varies considerably across countries.

It is impossible, however, to fully protect products from being counterfeited for “what one man can make, another can copy”. Indeed one only has to look at the counterfeiting problem in the banknote field, where numerous sophisticated security features are incorporated and which has

historically been plagued by counterfeiting, to see that total protection is an impossibility. Despite this, few people would nowadays argue against the fact that the use of anti-counterfeiting technologies can significantly reduce the risk of counterfeiting. The problem is more to identify the best solution for the company's particular problem.

In general, the technology has to be cost-effective, compatible with the distribution of the product, consumer-friendly, resistant and durable. For the most part it is only possible to build in security that will frustrate the counterfeiter for a period of time. Effective product protection can only generally be achieved by using a combination of different product-protection devices.

The various technologies available today vary considerably in the degree of sophistication and in the principles on which the protection against counterfeiting is based. They range from simple cost-effective printing technologies through optical technology, biotechnology, chemical and electronic fields. The nature of the product, and the type of counterfeit risks will determine the most appropriate technology.

It is common nowadays to have a system of solutions that comprise a combination of covert and overt technologies. Besides its primary use as a means of protection, the overt (or easily visible) device also serves to indicate the product's authenticity to consumers and distribution staff. The covert (or secret) device, on the other hand, needs to be carefully guarded and only disclosed to certain individuals charged with product protection since it serves as a back-up security device in the event that the overt feature is compromised and provides a means of protecting the integrity of the distribution chain.

The available technologies can broadly be categorised as follows.

Optical technologies

Some of the leading anti-counterfeiting technologies are found in the optical field and involve the use of light and its many properties. Among the optical technologies, holograms have become widely used as a means of product protection. A hologram is a recording of laser light which allows a two- or three-dimensional image to be recorded on a flat surface as a micro-relief diffraction pattern. The use of holograms as security devices has been successful for a number of reasons. They have a strong visual appeal, coupled with the difficulty and high investment necessary to replicate them. There is a large range of other optically variable anti-counterfeiting devices, including optically variable thin films, retro-reflective material and scrambled images.

Electronics

The electronic anti-counterfeiting technologies encompass a range of different options. Magnetic stripes are the leading security technology used to protect bank and credit cards. They are able to store a considerable amount of information in coded form in magnetisable particles which can be read by a contact scanner.

Smart cards incorporate another electronic technology that is rapidly developing and receiving growing acceptance as an anti-counterfeiting device. A smart card is a plastic card incorporating a computer chip which provides the means to write into or read information from the card with various degrees of security. Phone cards in some countries and credit cards are good examples of "smart"

technology. One of the long-term developments is for a super smart card which will contain a user interface for entering data on a keypad as well as a visual display.

The video, recording and software industries have devoted a good deal of research to finding ways of defeating counterfeiters electronically, and continue to do so. The systems developed generally involve electronic encryption that encodes original videos with a disturbance signal to confuse videocassette recorders during copying. The effect is to render any copies produced poor-quality and generally unviewable.

Another electronic anti-counterfeiting system involves using a hardware key to prevent software piracy. This is an add-on security device that attaches to the serial port of a computer or a parallel printer and "unlocks" software products designed to function only with the key.

Biotechnology

Breakthroughs in biotechnology have improved the understanding of the unique characteristics of biological proteins such as antibodies, enzymes and DNA. The identification of certain chemical structures and their capabilities to bring about specific reactions, has made biotechnology an increasingly important field among anti-counterfeiting technologies.

One well-known technology in this field has developed specific monoclonal antibodies to "recognise" certain antigens or marker chemicals. The marker chemicals are added in tiny concentrations to products such as pharmaceuticals or liquor and are detected by using a test kit containing the specific antibodies.

This type of anti-counterfeiting system has the advantage that the anti-counterfeiting technology is part of the product itself (which is usually edible). Furthermore, it is not possible for anyone else to break the codes because the concentrations are too low to be detected by conventional methods and the markers are present with other chemicals that mask them.

Chemical technologies

In what can broadly be termed the chemical field, anti-counterfeiting technologies include photochromic (or light-reactive) and thermochromic (or heat-reactive) inks. These are typically applied on product labels and packaging. When exposed to either heat or light they change colour, and when exposed again the colour reverts to the original. Generally the effect is reversible as often as required. Inks have also been developed that are invisible to the human eye but which can be read by bar-code scanners. These have been used in the fragrance and pharmaceutical industries to authenticate products. Other reactive inks change colour when brought into contact with specific substances, for example ink from a felt-tipped pen.

Another type of anti-counterfeiting device in this field involves the use of plastic "tags". These were originally developed as a means of marking and tracing explosives. By incorporating microscopic plastic tags into bulk explosives, the origin of the explosive can be determined both before and after use.

A microscopic tag is a virtually indestructible, microscopically small plastic particle of random irregular shape, constructed from up to ten different coloured layers. The sequence of colours denotes

the unique code of the tag and the total number of possible codes ranges up to 4.5 billion. The tags can be applied to both product and packaging in a number of ways, including incorporation in clear varnish.

Enforcement of rights: public-private partnership

Infringement of intellectual property rights is still seen as a white-collar crime among many enforcement officials, and enforcement of rights is regarded as an aid to self-help. There is no doubt that the right holder has to be proactive in pursuing the enforcement of his rights and provide all the necessary support to police and customs in order to achieve success.

Up to the beginning of the 1990s, most companies would bring civil actions against counterfeiters rather than notifying police or customs. However, during the last decade this has changed and there has been an increased interest in public-private partnership against counterfeiting. The industry had to understand that, although the enforcement agencies do work against counterfeiting, tight budgets and other crimes, such as drug smuggling, make it difficult for the officials to give it the priority it deserves.

Another problem has been information sharing. Companies receiving regular reports on counterfeiting of their products did not know how to share the information with the police, while the police could not justify concerted action since the crimes were not reported often enough.

There has been a radical change in attitudes, particularly since the drafting of the TRIPs Agreement. One of the basic objectives of the TRIPs Agreement was to ensure the availability of effective enforcement measures, while not creating obstacles to trade.

The TRIPs Council has encouraged the interest and activities of the World Customs Organisation (WCO) with regard to the enforcement of IPR. In 1995, the WCO adopted model legislation which countries could use for preparing national legislation with regard to fighting counterfeiting and piracy (Woosnam, 1997).

The model contains provisions regarding relations between customs authorities, right holders, importers and exporters and the procedures for disposal of counterfeit trademark or pirated goods. It provides a means by which right holders can ask customs to suspend the clearance of goods suspected of being counterfeit or pirated. It also states when customs can take *ex-officio* (by virtue of one's office) action in cases of suspect goods.

Nevertheless, the WCO states explicitly that the trademark and copyright holders have the ***prime responsibility*** for taking measures to protect their rights. The model recognises that the role of Customs is to ***assist*** in the enforcement of IPRs, which is reasonable. The WCO is formalising customs/business co-operation with Memoranda of Understanding (MOU) on international as well as on national levels. On the international level, the WCO has concluded IPR MOUs with organisations such as ICC Commercial Crime Services and the international umbrella organisation of national mechanical copyright societies (BIEM).

Interpol has teams specialised in counterfeiting who monitor international developments in this field and facilitate international action against counterfeiting and piracy. The main responsibility for the industry, according to Interpol, is to ensure that all criminal cases are reported to the appropriate law enforcement agency and that complaints are duly filed. Interpol acknowledges that many officers

in member states still consider counterfeiting to be a normal economic activity and that there are significant problems in connection with certain countries, but a sufficiently high level of complaints filed is necessary in order to obtain a mandate to act (Takizawa, 1997).

Co-operation between private industry and enforcement agencies needs to be re-enforced. Police and customs officers lack sufficient expertise to be able to identify goods that infringe a company's intellectual property rights. Infringers employ various *modus operandi* and are very innovative. Both parties – business and officials – have now realised that the internationalisation of fraud, its growth in magnitude, and the sophistication of infringers, renders it impossible for any company to successfully address the problem in isolation.

6. POLICY INITIATIVES

National policy initiatives

Intellectual property (IP) protection can be very misleading for some right holders. Applicants have to go through extensive procedures in applying for protection and pay expensive renewal fees for maintaining their exclusive rights, and on top of that have to defend their rights when these are infringed. Some countries have criminalised counterfeiting, which lifts the burden from right holders to some extent, but enforcement of IP is still regarded as a matter of self-help in most countries. The right holders must be active and show an interest in protecting their rights in order to initiate any enforcement action. There are few countries in which officials have taken anti-counterfeiting measures on their own initiative. Measures tend to be put forward only when the industry of a country gains influence over decision makers. Becoming a member of an anti-counterfeiting organisation is a way for IP owners to lobby policy makers to provide adequate enforcement.

There are a large number of national anti-counterfeiting organisations around the world. Although most were established during the last two decades, some are much older, the oldest being the Union des Fabricants formed at the end of the last century. The majority liaise closely with their national governments and influence policy in relation to the combat against counterfeiting. All are membership organisations of brand owners, law firms, or other bodies interested in intellectual property protection. Some have an independent secretariat, although the smaller or newly established organisations are run on a *pro bono* basis, usually by lawyers. The activities of the national anti-counterfeiting organisations involve liaising with enforcement authorities in the country, publicising the harm caused to their members due to IP theft and lobbying for adequate enforcement of intellectual property rights. Some associations provide training for customs officials on the detection of counterfeits.

The size of the organisations and their responsibilities vary considerably. Some are more engaged in lobbying, whereas others work on more practical enforcement. The current trend is to encourage the formation of national anti-counterfeiting groups in each industrialised nation (see Annex for a comprehensive list of anti-counterfeiting organisations).

Base	Organisation	Acronym
Bangladesh	Anti-Counterfeit Association	
Belgium	Anti-Counterfeit Association	BACA
France	Comité Colbert (luxury goods)	
France	Union des Fabricants	
Germany	Anti-Piracy Organisation	VBP
Hungary	Brand Protection Association	BPA
Italy	Anti-Counterfeiting Advisory Group	
Italy	International Anti-Counterfeiting Committee	COLC
Japan	Customs IP Information Centre	CIPIC
Korea	Korean IP Office	KIPO
Netherlands	Anti-Counterfeiting Foundation	
Philippines	COMPACT	
Philippines	The IP Association	IPA
Spain	ANDEMA	
Sweden	Anti-Counterfeiting Group	ACG
Thailand	Anti-Counterfeiting Committee	MOEA
United Kingdom	Anti-Counterfeiting Group	ACG
United States	International Anti-Counterfeiting Coalition	IACC
United Kingdom/France	Counterfeiting Intelligence Bureau	CIB

Private/industry initiatives

Certain industries that are significantly affected by counterfeiting have formed trade associations devoted to fighting the problem for the specific industry. The most active organisations internationally are from the US copyright industry, *e.g.* the Business Software Alliance (BSA), the International Federation of the Phonographic Industry (IFPI) and the Motion Picture Association (MPA).

These associations publish regular statistics on the impact of piracy and counterfeiting in their industry, promote adequate legislation and enforcement, run campaigns to educate the public and assist their members in conducting investigations into counterfeit goods.

Table 6. **List of industrial organisations engaged in anti-counterfeiting work**

Product	Organisation	Acronym	Base
Software	Business Software Alliance	BSA	United States
General	European Brands Association	AIM	Belgium
Audio films	International Federation of Film Producers	FIAPF	France
Musical recordings	International Federation of the Phonographic Industry	IFPI	United States
Copyrights	International Intellectual Property Alliance	IIPA	United States
Spirits	International Federation of Spirit Producers		Hong Kong (China)
Motion pictures	Motion Picture Association	MPA	United States
Watches	Swiss Watch Federation		Switzerland
Toys	Toy Industries of Europe	TIE	Brussels

International initiatives

In line with the globalisation of the industry and the increased international trade in counterfeit goods, there have been a number of cases where the trail from raw material to products on the shelf has run through a large number of countries. This international production and trade in counterfeits often involves organised criminals with extensive international networks.

Yet the enforcement of trademark protection is still on a national level. Although some bodies promote co-operation between enforcement agencies, *e.g.* Interpol and the WCO, very few cases of counterfeits are followed back to the source. Cases involving foreign fraudsters and victims are normally given lower priority due to budgetary constraints.

Many organisations have attempted to address this problem by setting up databases. On a public level, Interpol and the WCO have constructed databases on counterfeiting, but so far neither have been successful in getting national agencies to contribute regular information. On a private level, some trade associations have been successful in maintaining specialised databases, but very few have managed any cross-industry database. The ICC Counterfeiting Intelligence Bureau has made several attempts to encourage victims of counterfeiting to share information. The basic problem is that all companies would like to have more information, but few wish to contribute.

During 1997, there were two major initiatives on the international arena, REACT and GACG.

- ◊ REACT (*Réseau Européen Anti Contrefaçon*) was formed in June 1997 by the Dutch and Belgian anti-counterfeiting groups and is supported by the European Commission. Its core function is to set up a central database to support investigations by national coalitions as well as law enforcement agencies.
- ◊ GACG (*Global Anti-counterfeiting Group*) was formed in December 1997 under the auspices of the ICC and its Counterfeiting Intelligence Bureau. The group has wider support among organisations and currently acts more as a discussion forum aiming to improve international co-operation between the various anti-counterfeiting organisations and to raise awareness of the health and safety hazards of fakes. It is, so far, the only global initiative of its kind and has been well received in the business community.

Public initiatives

United States

The United States are by far the biggest producer of copyright-protected products (film and music recording and software). A study prepared for IIPA on the *Copyright Industries in the US*, showed that the copyright industry is the fastest growing industry in the United States and among the largest export sectors (International Intellectual Property Alliance, 1996). The US copyright industry is reporting the biggest losses due to piracy and, as a result, the US Government has proved to be the most active in working together with its industry to combat piracy.

The United States has a section in its Trade Act that gives the US Trade Representative (USTR, 1997) authority to determine whether the acts, policies and practices of foreign countries deny adequate and effective protection of intellectual property rights or fair and equitable market access for US persons who rely on intellectual property protection. “Special 301”, as it is called, was amended in the Uruguay Round Agreements Act to specify that a country can be found to deny adequate and effective intellectual property protection even if it is in compliance with its obligations under the TRIPs Agreement. It was also amended to direct the USTR to take into account a country’s prior status and behaviour under “Special 301”.

Once this pool of countries have been determined, the USTR is required to designate which, if any, of these countries should be designated "priority foreign countries". "Priority foreign countries" are those countries that:

1. have the most onerous and egregious acts, policies and practices which have the greatest adverse impact (actual or potential) on the relevant US products; and
2. are not engaged in good faith negotiations or making significant progress in negotiations to address these problems.

The USTR undertakes a review of foreign practices each year after the issuance of the National Trade Estimate (NTE) Report. The interagency Trade Policy Staff Committee that advises the USTR on implementation of "Special 301", obtains information from the private sector, American embassies abroad and the United States' trading partners.

The United States also has an advanced system for border control. The Copyright Act and the Trademarks Act state that infringing goods shall be prevented by the customs authorities. As a result, counterfeit goods that are detected at the border are subject to seizure and forfeiture, and the customs authority has a duty to destroy the goods if the right owner does not consent to any other use. The US customs authorities seized goods worth US$54 million in 1997 alone (US Customs Service, 1998).

European Union

Product counterfeiting is not confined to national borders, and organised networks of counterfeiters often operate across several countries. This is particularly the case within the European Union because of the free internal market, and trade is likely to increase as the Member States converge into the Single Market. Other factors are the trends towards conformity of consumer choices (most youngsters watch the same programmes on TV and desire similar designs) and legal steps aiming at removing border controls, such as the Schengen Agreement.

However, at the EU level, there have been a limited number of anti-counterfeiting initiatives (Khur, 1997). The main treaty in this field is the Anti-Counterfeiting Regulation (EEC 3842/86, amended EC 3295/94), in force since July 1995. The treaty deals mainly with substantive law and measures relating to border control. It does not address the core issues of remedies and enforcement of rights. These issues are left to the individual Member States and the legislative acts of EU only impose general obligations on Member States to provide appropriate remedies in respect of infringement of the rights provided in EC regulations.

There are indications that the protection and enforcement of IP is about to improve within the European Union. During this last decade many Member States have extensively harmonized their IP legislation. The European Union is also showing an increased interest in counterfeiting issues and is currently working on a Green Paper addressing these problems.

It is widely held by the industry that the main problems in combating counterfeiting stem from lack of efficient border controls. Free trade enables counterfeiters to import a consignment of counterfeits through ports where control is poor and then transport the consignment anywhere in the Union without risk of being caught. The police or other enforcement agencies that discover fakes on the market find it difficult to pursue their investigations through other countries due to lack of communication and tight budgets and often end up by dropping the case. In the end, the major beneficiaries of the pitfalls in the system are the counterfeiters.

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