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CLERK U.S. DISTRICT COURT
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IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA

DOGGIE DENTAL INC., *et al.*, Plaintiffs, v. MAX_BUY, *et al.*, Defendants.	Civil Action No. 19-746 **FILED UNDER SEAL**

DECLARATION OF STANLEY D. FERENCE III IN SUPPORT OF PLAINTIFF'S *EX PARTE* APPLICATION FOR ENTRY OF A TEMPORARY RESTRAINING ORDER AND PRELIMINARY INJUNCTION

I, STANLEY D. FERENCE III, hereby declare as follows:

1. I am an attorney with the law firm of Ference & Associates LLC ("the Ference Firm"), located at 409 Broad Street, Pittsburgh, Pennsylvania 15143 and represent Doggie Dental Inc. and Peter Dertsakyan (collectively "Plaintiffs") in the above-referenced action.

2. I make and submit this declaration in support of Plaintiff's *ex parte* application for the following: 1) a temporary restraining order; an order restraining assets and Merchant Storefronts; 3) an order to show cause why a preliminary injunction should not issue; and 4) an order authorizing expedited discovery against the above-named Defendants, Third Party Service Providers, and Financial Institutions, in light of Defendants' intentional and willful offerings for sale and/or sales of Infringing Products ("Application").

Impact of Online Piracy and Counterfeiting

3. According to a January 2011 Mark Monitor report entitled "Traffic Report: Online Piracy and Counterfeiting," the combined traffic to 48 sites selling counterfeit goods was more than 240,000 visits per day on average or more than 87 million visits per year. A 2012 Mark Monitor article entitled "White Paper: Seven Best Practices for Fighting Counterfeit Sales Online" reported that counterfeiters' illicit online activities will cost legitimate businesses $135 billion in lost revenue annually. True and correct copies of these reports are attached hereto as **Exhibit 1**.

4. According to an intellectual property rights seizures statistics reports issued by Homeland Security, the manufacturer's suggested retail price (MSRP) of goods seized by the U.S. government annually since 2012 exceeds $1 billion. The 2012 report noted that the Internet has fueled "explosive growth" in the number of small packages of counterfeit goods shipped through the mail and express carriers. True and correct copies of this report is attached hereto as **Exhibit 2**.

5. A February 2011 report commissioned by Business Action to Stop Counterfeiting and Piracy (BASCAP) entitled "Estimating the Global Economic and Social Impacts of Counterfeiting and Piracy" included findings that counterfeit and pirated products account for an estimated $650 billion in losses in international trade, resulting in tens of thousands of lost jobs for legitimate businesses and broader economic losses, including lost tax revenue, of more than $125 billion every year. This figure is expected to increase each year. A true and correct copy of this report is attached hereto as **Exhibit 3**.

Rule 65(b) Certifications

6. In my experience policing products, and based upon my review of lawsuits filed by other brand owners, sellers of counterfeit and/or infringing products, particularly those sellers whose product listings are removed, merely change the description or photograph and then re-post the listing for the products on their respective Merchant Storefront[1] or modify or create a new User Account[2] and/or Merchant Storefront and proceed to sell the same product again. Likewise, these sellers are sophisticated enough to monitor the US courts through PACER and the like looking for lawsuits that name them or their associates Merchant Storefronts and will drain their related financial accounts upon any notice that a lawsuit is filed against their activity.

7. Based upon my personal experience and my review of lawsuits filed by other brand owners, I have learned that the Defendants selling on Internet marketplaces do not display their registered business name or trade name, contact name, complete address or any other contact information. These Defendants use their respective Merchant Storefronts and User Accounts to anonymously sell their Infringing or Counterfeit Products. Likewise, these Defendants typically use shipping services like EMS and DHL and ePacket. These shipping services provide minimal tracking and/or use incomplete or made up return addresses to further secret their identities.

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[1] As defined in the Complaint, a "User Account" is any and all accounts with online marketplace platform eBay.com, as well as any and all as yet undiscovered accounts with additional online marketplace platforms held by or associated with Defendants, their respective officers, employees, agents, servants and all other persons in active concert with any of them.

[2] As defined in the Complaint, a "Merchant Storefront" is any and all User Accounts through which Defendants, their respective officers, employees, agents, servants and all persons in active concert or participation with any of them operate storefronts to manufacture, import, export, advertise, market, promote, distribute, display, offer for sale, sell and/or otherwise deal in products, including Infringing Products, which are held by or associated with Defendants, their respective officers, employees, agents, servants and all persons in active concert or participation with any of them.

8. Based upon the foregoing facts, supported by the evidence set forth in **Composite Exhibit 1**, it is submitted that providing notice of the Motion for Temporary Restraining Order and the restraints of the Defendant's Merchant Storefronts and Accounts would allow the Defendants to avoid the Court's Order thus depriving the Plaintiffs of any damage recovery and otherwise prevent the full operation of the Court's Order.

9. To prevent the Defendants from escaping the effects of the Court's Order, Plaintiffs, Plaintiffs' Counsel and their agents have not publicized the filing of this lawsuit or the request for *ex parte* relief.

10. It is respectfully submitted that based upon the Complaint allegations, and the declarations and exhibits submitted therewith, Plaintiffs have met the requirements of Fed. R. Civ. P. 65 (b) in their application to the court for an Ex Parte Temporary Restraining Order because:

(a) the specific facts in the affidavit and the verified complaint clearly show that immediate and irreparable injury, loss, or damage will result to the movant before the adverse party can be heard in opposition; and

(b) the movant's attorney (undersigned) has herein certified in writing that notice would, in this case, defeat the purposes of the application for the *ex parte* temporary restraining order and asset restraint.

I declare under penalty of perjury that the foregoing is true and correct.

Dated: Pittsburgh, Pennsylvania
June 24, 2019

/s/ Stanley D. Ference IIII
Stanley D. Ference III

EXHIBIT 1

January 2011

Traffic Report: Online Piracy and Counterfeiting

MarkMonitor®

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The Internet is arguably one of the greatest innovations of modern society—allowing for countless new businesses to thrive and dramatically altering the way society operates. The Internet has enabled a global marketplace to flourish with lightning-quick communication and an unparalleled access to information. However, the advancement of the Internet into nearly all of our daily activities, combined with rapid download speeds, the perfection of digital copies, the rise of e-commerce and the complexity of online enforcement, has magnified the seriousness and consequences of online counterfeiting and piracy. Websites offering pirated goods generate billions of visits annually, and websites that sell counterfeit luxury goods, fake drugs, and products that may pose health and safety risks attract hundreds of millions annually.

As our economy has worsened, brand abusers have sharpened their focus.

Recognizing that illicit online sales have a significant impact on the U.S. economy in financial terms as well as in public health and well-being, MarkMonitor® worked to identify a sample of rogue Internet sites that are responsible for trafficking counterfeit and pirated goods. The goal of the project was to illustrate the nature of this illicit ecosystem and, using publicly-available traffic information on the number of visits, determine its scope.

The first step was to identify business categories and brands targeted by online counterfeiters and digital pirates. Using 22 major brands as criteria—ranging from pharmaceuticals, luxury goods, and apparel to entertainment titles and software—MarkMonitor used its patented technology to comb the Internet for sites suspected of offering counterfeit goods or pirated digital content. The initial scans resulted in more than 10,000 results which were then de-duplicated and filtered further using MarkMonitor technology to identify dedicated e-commerce and digital download sites. The final step required hand-examination and verification of more than 600 results to determine classification. Since some sites offered multiple brands, this step led to almost 100 unique domains or websites which were then classified in one of two ways: 'counterfeit' or 'digital piracy'.

Using publicly-available Internet traffic data from Alexa, the sites were then ranked by the number of visits, which were significant, speaking to the level of demand for these goods as well as to the website operators' success in promoting these sites so they are visible and accessible online. Since the study used a sample of only 22 brands, it provides a small glimpse of the nature of online intellectual property (IP) theft and the dark side of illicit e-commerce. However, given the large number of popular brands, it is reasonable to assume that hundreds of thousands of other rights-holders, brands and content creators are suffering the same damage.

Key Findings

The study's findings demonstrate that online distribution of pirated digital content and e-commerce sales of counterfeit goods is rampant. Specific findings include:

- In total, the 10 media brands in the study yielded 43 unique sites classified as 'digital piracy.' Traffic generated to these sites was over 146 million visits per day, representing more than 53 billion visits per year.
- The top-three websites classified as 'digital piracy'—rapidshare.com, megavideo.com, and megaupload.com—collectively generate more than 21 billion visits per year.
- The availability of reliable infrastructure is an important factor in the location of sites hosting piracy. The study found that North America and Western Europe represented the host location for 67 percent of the sites classified as 'digital piracy.'
- The combined traffic to the 48 sites selling counterfeit goods is more than 240,000 visits per day on average or more than 87 million visits per year.
- When it comes to host location of the sites categorized as 'counterfeit', 73 percent were hosted in North America or Western Europe. Eastern European countries hosted another 14 percent of the sites while 9 percent of the sites were hosted in Asia.
- The combined traffic to the 26 sites selling counterfeit prescription drugs is more than 141,000 visits per day on average or more than 51 million visits per year.
- The combined traffic to the 21 e-commerce sites selling counterfeit luxury goods is more than 98,000 visits per day on average or almost 36 million visits per year.

These findings are just the tip of the iceberg. The true scope of the problem is exponentially higher in terms of user traffic, lost revenue and risks to public health and safety.

The study used only 22 brands, so we can assume that many other brands and content-creators are suffering similar damage.

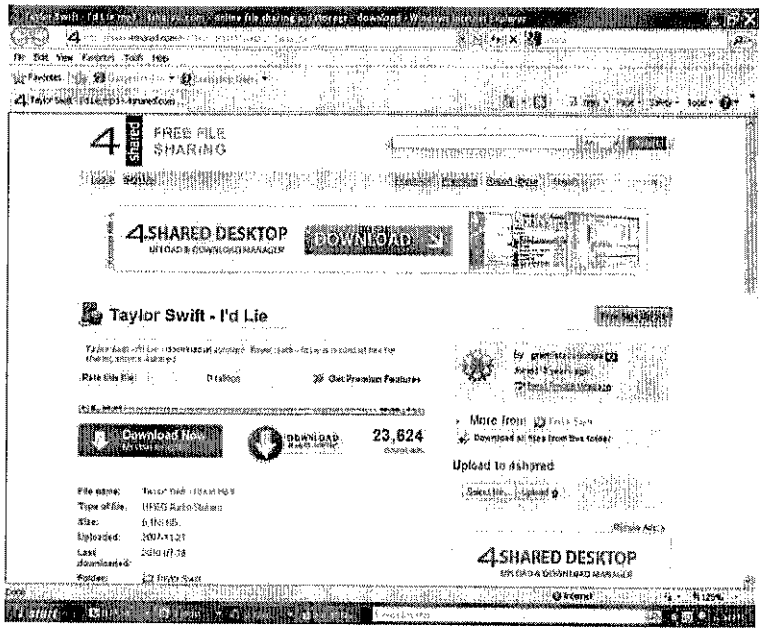
Methodology

Using a list of industries most affected by online counterfeiting and digital piracy,[1] MarkMonitor chose major brands from each industry and ran automated scans for those brands using its patented technology. In all, the study examined 22 brands in the digital content category (movies/TV shows, music and software/videogames) and the physical goods category (handbags, sports apparel, pharmaceuticals and luxury items, footwear, and apparel.)

The study used very narrow criteria to classify sites selling physical goods as 'counterfeit.' It is important to point out that many of the e-commerce sites that did not meet that strict guideline did display multiple factors arousing suspicion. This

[1] Digital Content industries: Entertainment (music/movies/television shows), Software/Videogames; Physical Goods: Handbags, Sports Apparel with logos, Pharmaceuticals, luxury items, footwear, and apparel.

underscores the crucial role that brand owners and law enforcement personnel trained by brand owners play in determining whether a site is offering counterfeit goods. Technology can be used to conduct the heavy lifting in identifying and prioritizing sites for further action, but the in-depth market and product knowledge of brand owners' is vital.



Site attracts more than 10 million visits per day.

The scans focused on identifying e-commerce and peer-to-peer, streaming, and torrent sites that yielded high traffic levels. In order to be classified as an e-commerce site, the site needed to contain a shopping cart while the sites classified as piracy needed to contain some type of link, index or player that could be used to download, stream or share digital content. These criteria were designed to eliminate editorial, blog or discussion sites and to focus exclusively on sites where pirated goods could be shared, viewed, streamed or downloaded and counterfeit goods could be purchased.

The initial scans resulted in more than 10,000 results which were then de-duplicated and filtered further using MarkMonitor technology to identify dedicated e-commerce and digital content sites used for downloading, sharing or streaming. The final step required hand-examination and verification of more than 600 results to determine classification. Since some sites offered multiple brands, this step led to almost 100 unique domains or websites which were then classified as either 'counterfeit' or 'digital piracy'. The results were ranked by the amount of traffic, defined as the number of daily visits, using Alexa-supplied information. None of the scans contained MarkMonitor customer data or information.

Criteria for Websites

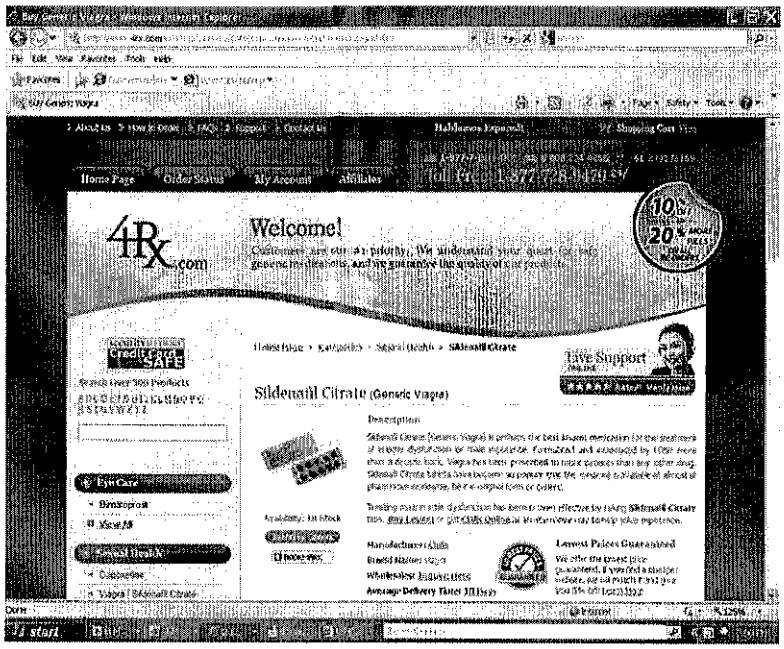
The results from the initial scans were examined further by MarkMonitor experts in order to classify these sites, or domains, into one of two categories: 'counterfeit' or 'digital piracy.' After thorough analysis, MarkMonitor concluded that 91 websites with high traffic numbers qualified for inclusion in one of these categories. The 'counterfeit' classification referred to e-commerce sites selling counterfeit physical goods while the 'digital piracy' classification refers to sites offering pirated versions of music, movies, television shows, software, and videogames.

Digital Piracy: The total number of unique domains identified as 'digital piracy' totaled 43. To fit the 'digital piracy' classification, the domain needed to offer or point to one or more of the brands used in the digital content portion of the study for free. While some of these sites do offer takedown processes for pirated

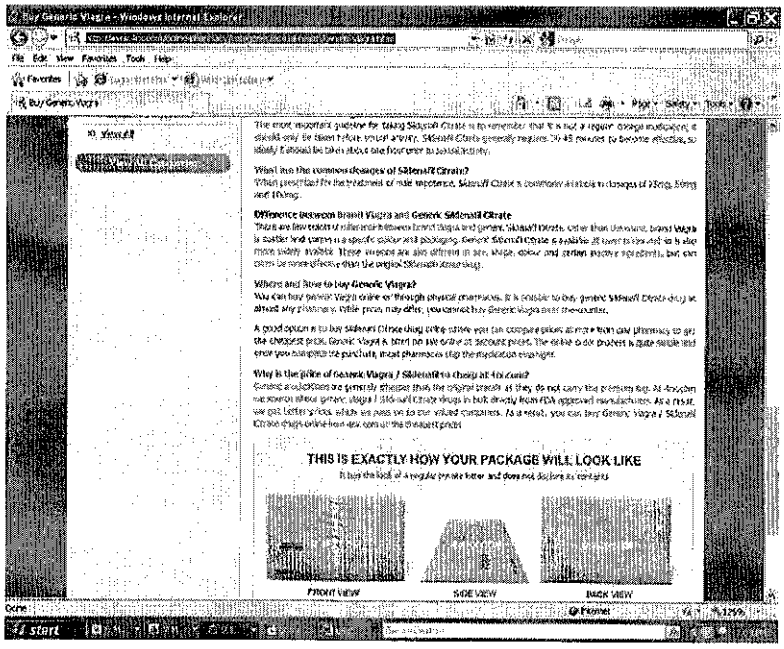
content, the action must be initiated by the content owner. The resulting domains were then sorted by traffic volume.

'Counterfeit': In the case of e-commerce domains selling physical goods, the domains needed to satisfy one of two conditions to be deemed as selling counterfeit goods: (1) either the domain itself specified that the goods were not authentic (i.e., using terms like 'replica," 'knock-off,' and 'copy') or (2) in the case of pharmaceuticals, the domain offered 'generic' versions of prescription drugs that are not available in generic form in the U.S., targeted the U.S. market by providing pricing in U.S. currency, and did not require a prescription.[2] Since some domains offered more than one type of product, the domain is counted only once, even if multiple URLs for that domain surfaced during the scans. MarkMonitor found that 48 websites fell under the criteria for selling counterfeit goods.

While the online pharmacies displayed the 'generic' label prominently on product listings, MarkMonitor needed to consult FAQ or 'About' sections of the online drugstores, or even needed to follow the purchase process, in order to determine if prescriptions were required by the online pharmacy. In addition, MarkMonitor examined the currency used to quote prices, shipping information or other information on the site that indicated markets served, such as flags, shipping information, telephone numbers or references to the U.S. Drug Enforcement Agency. Many of the e-commerce domains selling counterfeit goods displayed the term 'replica' quite prominently while others included such information in their FAQ or 'About.'



Site sells 'generics' without prescription for prescription drugs that are not available in generic form.



Site explains the difference between 'generic' and branded prescription drugs and highlights unmarked shipping envelopes.

[2] During the course of the study, MarkMonitor identified some additional sites that fit the criteria for inclusion but did not use one of the original media brands such as sites offering key generators used to 'unlock' protected material.

Traffic Analysis

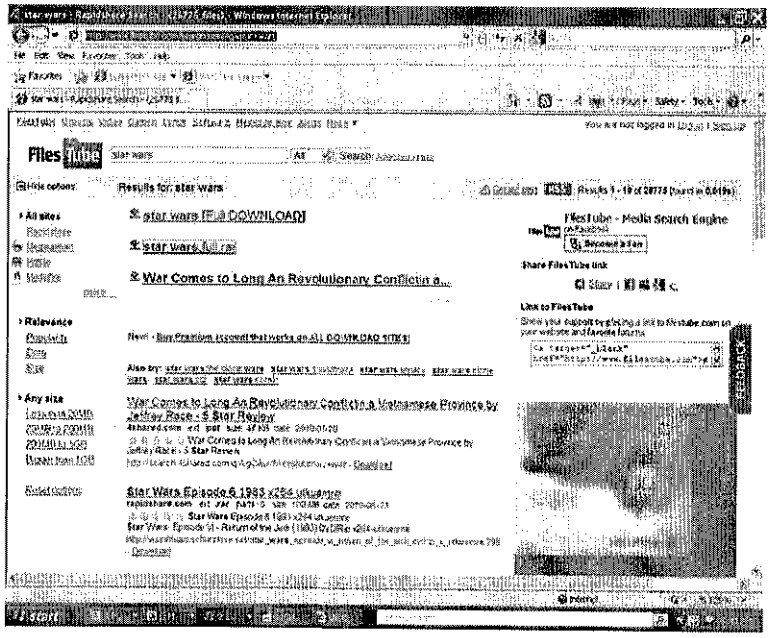
As a backdrop to examining website traffic figures, it is important to point out that traffic measurements can vary greatly depending on methodology. Some traffic measurement sources depend on technology, others depend on some type of user panel or community, and a third category uses a hybrid approach. Each approach has advantages and disadvantages which, as a result, allow publicly-available traffic data to vary based upon the measurement source. In this study, MarkMonitor used data based on Alexa. The more than 90 unique domains culled from the initial set of over 10,000 results display a wide range of traffic figures, depending on the type of goods being offered.

Traffic to sites suspected of offering pirated content was over 146 million visits per day.

Digital Piracy Web Traffic Analysis: Those domains classified as 'digital piracy' attracted the highest levels of traffic with a high in excess of 32 million daily visits on average for the most-trafficked domain—rapidshare.com. On an annual basis, that traffic equates to more than 11.8 billion visits per year for that site. This pattern continues with the second and third most-trafficked sites—megavideo.com and megaupload.com—each of which generates more than 13 million visits per day on average, or more than 4.9 billion visits per year to each site. Collectively, these three digital piracy sites generate more than 21 billion visits per year.

In total, traffic generated to the sites classified as 'digital piracy' was more than 146 million visits per day, representing more than 53 billion visits per year. Lest these figures be viewed as anomalies, examining the ten least-visited 'digital piracy' sites show annual visits total more than 781 million per year, demonstrating that even the lesser-trafficked sites in this category drive significant traffic.

The bulk of the 'digital piracy' sites, or 67 percent, were hosted in North America or Western Europe.



Site attracts more than seven million visits per day.

Counterfeit Website Traffic Analysis: Due to the narrow criteria used to classify sites as 'counterfeit,' all the sites included in the analysis, with one exception, sold prescription drugs or luxury goods, including handbags, watches or jewelry. The combined traffic to the 48 sites selling counterfeit goods is more than 240,000 visits per day on average or more than 87 million visits per year. The majority of these sites reflect similar patterns as the sites classified as 'digital piracy' when it comes to the server's host location with or 56 percent hosted in North America and Western Europe. However, Eastern European countries hosted 22 percent of the sites while 14 percent of the sites were hosted in Asia.

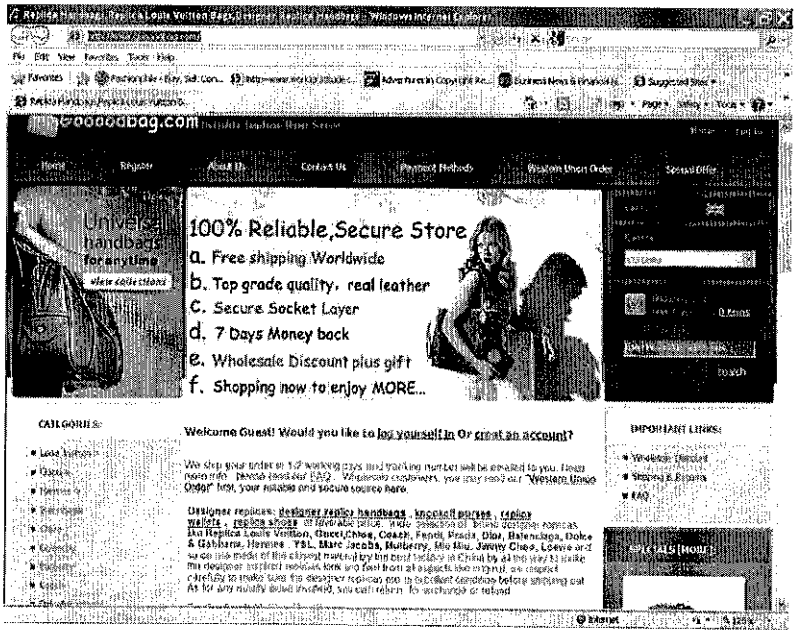
However, examining the site registration information for these 'counterfeit' sites suggests that more of these sites may be linked to Asia as seven sites hosted in non-Asian countries are actually registered by Asian registrars. Factoring in that information indicates that 29 percent of the sites have some connection to Asia, either through host location or registrar.

While not at the scale of the suspected digital piracy sites, e-commerce domains classified as 'counterfeit' attracted considerable levels of traffic as well with the most-trafficked site, an Internet pharmacy, driving 28,000 daily visits on average, representing more than 10 million visits to the site per year.

Combined traffic to the sites selling counterfeit goods is more than 87 million visits per year.

Suspicious Sites: During the course of the research, we identified sites that displayed one or more factors that appeared questionable, such as significant price discounts, links to sites selling counterfeit goods, trade dress issues, or, in the case of online pharmacies, no requirement for prescriptions. These types of issues underscore the crucial role that brand owners and law enforcement personnel trained by brand owners play in determining whether a site is offering counterfeit or pirated goods. While some sites are very clear in specifying their goods are 'copies' or 'replicas,' others are less forthcoming. In many cases, deep discounts combined with promises of high-quality goods from the current season raise questions that only the brand owner—with knowledge of channel strategy, pricing and partnerships—can address.

In the case of highly regulated goods like pharmaceuticals, intellectual property protections for pharmaceutical patents or regulations governing generics may differ across national boundaries. Instead, the business practices of the pharmacy itself—such as prescription requirements or sales of individual pills—are more useful in identifying suspicious drugs. The role of the brand owner, with in-depth knowledge of distribution channels, pricing and local business practices, is vital. In each of these examples, the most authoritative answer is provided by a physical examination of the goods themselves.



This site promotes replica designer bags and attracts more than two million visits annually.

Conclusion

The research presented in this study demonstrates the wide availability of pirated digital content and counterfeit goods via the Internet and e-commerce. The websites yielded in the research and analyses of this study all have one thing in common: business models that are indisputably centered on the sale or distribution of counterfeit and pirated goods. These illegal operations are shifting revenue

from legitimate brands' e-commerce sites, causing economic harm and risking consumer health. This study highlights the type of data that needs to be examined in order to identify and locate sites trafficking in counterfeit and pirated goods. Accurate and unbiased information describing the scope of online counterfeiting and piracy as an essential prerequisite for safeguarding consumer safety and economic well-being.

While counterfeiting and piracy in the physical world are serious problems, these issues are growing at a significant rate online and pose unique challenges in remediation, due to the inherent nature of the Internet with its global reach, cost efficiencies, and anonymity. Awareness and educational efforts focused on the distinctive nature of online counterfeiting and piracy are necessary in developing effective response mechanisms to this global, cross-border problem. Necessary government policies, corrective legislative measures, law enforcement action and, most importantly, actively-engaged brand owners are all needed to stem this growing tide of illegal Internet activity. The bottom line is that online IP theft ultimately affects the most creative and innovative sectors of the economy, contributing to billions in lost revenue and millions of lost jobs. Protecting IP rights is a critical component of our economic resurgence, and vitally important to our future; stopping the spread of pirated and counterfeit goods is a necessity.

"Combined traffic to the pharmacies selling suspected counterfeit prescription drugs is more than 51 million visits per year."

About MarkMonitor

MarkMonitor, the global leader in enterprise brand protection, offers comprehensive solutions and services that safeguard brands, reputation and revenue from online risks. With end-to-end solutions that address the growing threats of online fraud, brand abuse and unauthorized channels, MarkMonitor enables a secure Internet for businesses and their customers. The company's exclusive access to data combined with its patented real-time prevention, detection and response capabilities provide wide-ranging protection to the ever-changing online risks faced by brands today. For more information, visit **www.markmonitor.com**

More than half the Fortune 100 trust MarkMonitor to protect their brands online. **See what we can do for you.**

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White Paper

Seven Best Practices for Fighting Counterfeit Sales Online

Executive Summary

Counterfeit sales represent seven percent of all global trade.[1] The damage these sales do to rightful brand owners goes well beyond revenues and profits: Numerous reports have suggested that counterfeit and piracy trade supports terrorism, organized crime and other threats to both national security and human rights. The Internet's rapid growth — along with its instant global reach and anonymity — has significantly escalated the situation.

An entire online supply chain, parallel to legitimate distribution channels, has flourished around counterfeit goods. Online B2B marketplaces, in addition to e-commerce sites — many promoted via social media and search engines — commonly traffic in counterfeit goods. Fake products acquired on wholesale sites are sold across multiple digital channels, or at flea markets and shops in the physical world.

Deceptive use of proven marketing techniques — paid search ads, search engine optimization, email and social media campaigns, branded domain names and more — are important parts of this illicit ecosystem, as savvy counterfeiters apply marketing best practices.

Fortunately, brand owners can adopt their own proven best practices to successfully combat online counterfeit sales. Unlike anti-counterfeiting strategies in the physical world, however, a two-pronged approach is necessary: Brand owners must choke off counterfeit sales at both promotional and distribution points. Technology exists for identifying and quantifying worldwide online counterfeiting activity in both promotional and distribution channels, and, once visible, infringement can be prioritized and attacked. The battle against online counterfeit sales can be won. With billions in revenues, critical customer loyalty and even public safety and human rights at stake, it must.

MarkMonitor
Protecting brands in the digital world

Clarivate Analytics

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Counterfeiting: A Growing Online Threat

"If you can make it, you can fake it." Unfortunately, the old saying is all too true. Sales of counterfeit goods affect a wide range of industries, from high-margin luxury and technology goods to low-margin consumer goods like batteries, shampoo, gasoline and food.

The problem is growing, in part because the volume of fake goods produced is rapidly increasing — especially in countries like China, where manufacturing capacities continue to skyrocket. Mainland China was the point of origination for approximately $1.2 billion of the $1.7 billion in counterfeit goods confiscated by U.S. law enforcement agencies in 2013.[2]

This growth in supply helps fuel the exploding demand — especially online. The Internet's rapid growth — along with its instant global reach and anonymity — has significantly escalated the situation, moving the sale of counterfeit goods from the local street corner to a global marketplace. Because criminals can quickly and easily set up e-commerce storefronts or place listings on B2B marketplaces cost-effectively, their activities will continue to cost legitimate businesses billions in lost revenue.

Counterfeiting's Real Cost to Business

According to the secretary general of the ICC, multinational manufacturers lose roughly ten percent of their top-line revenue to counterfeiters — but the impacts go well beyond the revenue hit. For some companies, perceived brand value suffers when knock-offs become plentiful. Brands may even lose representation in distribution channels when resellers and affiliates see a reduction in demand due to competition from fakes. Additionally, the availability of cheaper, albeit fake, alternatives can exert downward pressure on legitimate brand pricing.

Other impacts include product safety issues — especially in pharmaceutical, automotive, aviation, healthcare, electronics and similar industries — accompanied by increased legal liability risks. And as consumers experience quality problems with fake goods, the legitimate brand's customer service and warranty costs can climb.

Marketing costs also rise as illicit sellers bid up paid search advertising costs and erode legitimate search engine optimization (SEO) investments. Finally, as more customers encounter inauthentic brand experiences, both loyalty and lifetime customer value suffer.

How Counterfeiting Thrives Online

Counterfeits in Digital Channels Affect Multiple Industries:

Tablets

Listings for clones, suspected counterfeits or gray market tablet computers numbered more than 23,000 in a single day

More than 6,600 cybersquatted sites taking advantage of tablet brands generated more than 75 million annual visits

Luxury Goods

Suspected counterfeiters attracted 120 million annual visits to their e-commerce sites, representing almost half the traffic generated by the legitimate dot com sites for five luxury brands

Brandjackers set up more than 1,100 cybersquatted sites touting luxury brands and more than 50 suspicious vendors purchased luxury brands keywords in paid search scams

Sports Apparel

Suspected counterfeiters attracted 56 million annual visits to e-commerce sites annually

Suspected counterfeiters sold almost 1.2 million suspicious jerseys via e-commerce and business-to-business (B2B) marketplaces sites annually

We found more than 6,000 suspects selling more than 1.2 million shirts or jerseys annually over the Internet, generating nearly $25 million in revenue.

Source: MarkMonitor Brandjacking Index®

An entire online supply chain — parallel to legitimate distribution channels — has grown around counterfeit goods. This illicit but highly profitable industry takes advantage of the same online tools, techniques and best practices employed by legitimate brands online.

The contrasts with counterfeiting in the physical world are important to understand, and are based upon the Internet's global reach, anonymity and efficiency. These attributes — and especially the digital world's powerful promotional potential — have enabled online counterfeiters to dramatically (and rapidly) outstrip all the street corner fakes, flea markets and "Canal Street districts" that exist.

In the wholesale trade, B2B marketplaces (also known as trade boards) often traffic in counterfeit goods. At the retail level, counterfeiters also use marketplaces to supply counterfeit goods to consumers. It's not unusual for counterfeiters to acquire fake goods on wholesale sites, only to resell them to consumers via digital channels — in addition to offline flea markets, bazaars and even retail shops.

Promotion is an important part of this illicit ecosystem. Counterfeiters use the same tactics as legitimate marketers, such as paid search ads and search engine optimization to lure buyers to their sites. According to Direct Magazine, fully 14 percent of searches on a branded item lead online users somewhere other than the legitimate brand's site. While some of these searches may lead to legitimate resellers or partners, it's reasonable to assume that many of them end up on the site of a counterfeiter.

Some counterfeit sellers also employ unsolicited email — spam — to boost their site traffic. This is especially prevalent among sellers of fake pharmaceuticals, software and luxury goods such as watches, jewelry and high-end apparel. They also make use of cybersquatting techniques, using branded terms in domain names in order to attract Web traffic and convey authenticity. And, as savvy marketers, they take advantage of inbound linking strategies and other SEO techniques to sell their illicit goods online.

The counterfeiting ecosystem extends to popular auction and exchange sites where direct searches frequently include counterfeit goods among their results. Links to sites pushing counterfeit wares can also be found on social media venues such as social networking sites, blogs and micro-blogs.

Clearly, legitimate and counterfeit ecosystems overlap — with some auction and e-commerce sites selling both real and fake goods — and this makes the problem more difficult to address. There are best practices, however, which can help brands minimize the damage from counterfeit sales in digital channels.

Beating Back Counterfeiters Online: Seven Best Practices

While the sale of counterfeit goods in the physical world is a timeworn tradition — if an unwelcome one — the online counterfeiting ecosystem offers unique challenges that require a unique approach. Proven best practices have emerged from brands that have actively and successfully engaged in combating counterfeit sales online.

1. Attain global visibility. Before a brand can understand the scope of the threat posed by online counterfeit sales, it must expose and quantify the problem. Counterfeiters operate over a wide array of online channels; all of these, including online marketplaces, e-commerce sites, message boards and the rest, must be monitored and analyzed. There's some good news for brands, however. Our experience shows that ten online marketplaces account for fully 80 percent of all marketplace traffic. Monitor these marketplaces, and you're watching a significant share of traffic.

Counterfeiters depend on technology to drive sales volumes so approach the monitoring challenge with the same tools and leverage technology to form a complete and accurate picture of the counterfeiting challenge that your brand faces.

2. Monitor points of promotion. While it's obviously important to identify and shut down distribution channels, it's almost certain that counterfeiters will regularly seek new sales venues. So it's just as critical to monitor the online promotional channels used by these criminals.

Counterfeiters use the same effective promotion techniques employed by legitimate marketers while leveraging the powerful, highly recognizable brands built by experts. Using paid search advertising, links within social media, black hat SEO tactics, cybersquatting and spam, they successfully steer traffic to their illicit offerings, and diminish the marketing ROI of legitimate brands. Monitoring for these promotional efforts is critical — and enables our next best practice.

3. Take proactive action. Counterfeiters obviously encounter more success when left to operate unchallenged; they're also known to shift their energies to more passive targets when brands visibly fight back. Once a brand understands where

the greatest threats lie, aggressive action is the best strategy. Brands should:

- **Set priorities.** Identify the biggest offenders, offering the greatest number of counterfeit goods in the most highly trafficked venues, and address them first. Brand owners should determine which counterfeit goods are generating the largest sales, and target them first as well.
- **Watch for cybersquatters.** Brands should actively monitor the Internet for unauthorized use of their branded terms in domain names. This will aid in rapid detection of e-commerce sites selling counterfeit or unauthorized goods — and frequently also uncovers other abuses such as false association with offensive content like pornography.
- **Become a difficult target.** Brands that visibly, vigorously fight to remove counterfeit goods from online venues often see a dramatic drop in infringement against their brands.
- **Use all your weapons.** Most online channels provide mechanisms for dealing with counterfeit sales situations. Online marketplaces, for example, typically have policies and procedures enabling brand owners to report listings that infringe their brand.

  Search engines offer similar facilities. Major search engines have procedures for requesting the removal of ads linked to counterfeit sites. Websites can also be removed from search results pages if they are found to violate copyright laws (a common practice among sites selling counterfeits, typically through unauthorized use of product images).
- **Get help from friends.** Industry relationships can be powerful weapons in the fight against online counterfeiting. When choosing a brand protection solution provider, look for one with established ties with thousands of ISPs and Registrars worldwide. Simply put, these ties make it possible to get counterfeit sites shut down more quickly—thereby minimizing brand owner losses. Trade associations such as the International AntiCounterfeiting Coalition (IACC), the Anti-Counterfeiting Group (ACG) and the American Apparel and Footwear Association (AAFA) also provide resources and advice on best practices for fighting counterfeiters.

The Best Tools for Fighting Technology-enabled Counterfeit Sales

Brand:	Snap-on
Challenge:	Significant online sales of counterfeit Snap-on tools, resulted in erosion of revenues, perceived brand value and customer loyalty.
Response:	Snap-on employed sophisticated monitoring and detection technology solutions to fight online counterfeit sales.
Results:	Counterfeit products valued at $1.2 million — found in 4,900 illegal auction listings — were identified and removed in coordination with an online auction site.

4. Fight online counterfeit sales holistically. Online counterfeit sales are easier to address when the entire enterprise participates. That means brand owners should set up a cross-functional task force to address the issue in a coordinated, holistic manner.

Stakeholders — and, therefore, recommended participants — will vary by industry and enterprise, but can include legal, marketing, risk management, loss prevention,

channel sales management, manufacturing, supply chain management and other functional units.

Because fighting online counterfeiting requires attacking both promotional and distribution channels, this group needs to address more facets of the problem than seen in the physical world. All of these groups can, and should, set priorities and strategies for detecting, reporting and responding to infringers and should continue to inform the process as their situations and perceptions dictate.

5. Let online intelligence inform offline defense measures. Because offline measures — physical investigations, factory raids and other activities — can be costly and time-consuming, it's critical to know where they should be focused. Online intelligence can help identify the most egregious infringers, so that offline defensive efforts can be focused where they'll be most effective.

6. Act swiftly — and globally. Perhaps even more than it affects legitimate business, the proliferation of international trade offers tremendous benefits to online counterfeiters. While a domestic seller or manufacturer may seem like an easy first target, brands have learned that it's more effective to launch global anti-counterfeiting initiatives — and to get them underway expeditiously.

Prepare by ensuring your trademarks are registered internationally — especially in China, which observes a "first-to-file" policy that grants registration to whoever files first, even if it's not the true brand owner.

A global effort doesn't preclude addressing markets that target a specific country exclusively. In some cases, this will require competent language translation resources for monitoring, detection and enforcement. Most companies rely on third-party brand protection solution providers for this kind of expertise.

7. Educate your customers. Your customers can be an important ally in minimizing sales of counterfeit goods with all its associated costs. Educate your customers about the risks of buying from unauthorized sources, and recruit them to join in the effort by reporting suspicious goods and sellers. The Authentics Foundation and its consumer site, dontbuyfakes.com, have useful resources for consumer education. Also, many brands provide form or email-based mechanisms for reporting suspected infringement. When offering such tools, be sure to reinforce the benefits of buying authentic goods from authorized sellers.

Footwear Manufacturer Stomps Online Counterfeiters

Global footwear leader Deckers Outdoor, faced with millions in online sales of counterfeit and grey market goods, moved promptly to protect its customers and its bottom line. Leveraging brand protection technology, the company was able to:

- Pinpoint — and remove or de-list — $4.35 million in illegitimate goods and knock-offs within just 90 days
- Significantly curtail counterfeiting activity that undermined its revenues
- Enhance its brand reputation and increase customer trust and loyalty by automating and extending online enforcement

Online Intelligence Helps Focus Physical Efforts

Acushnet Company, a leader in the golf industry, leveraged online intelligence to guide a major raid in the U.K., shutting down a large counterfeiting operation that fed online distribution channels.[3]

Conclusion: The Fight Is Yours to Win

Online counterfeiting can heavily impact any company, affecting revenues, channel relationships, customer experience, marketing effectiveness, legal liability and more. Ignoring it — or just hoping for the best — simply isn't good business.

Fortunately, taking action can be fairly straightforward. Implementing the best practices discussed here doesn't have to involve complex organizational changes or extensive hiring efforts, as third-party solution providers can help make the effort efficient and supplement internal teams.

Global Imaging Giant Protects its Image — and Profits

Print technology leader Epson created a centralized mechanism for globally monitoring for online brand abuses including counterfeit sales.

By forming a global, cross-functional team, Epson achieved a three-fold reduction in counterfeit sales activities on consumer and B2B marketplaces. Their visible, aggressive strategy has also served to deter abuse.

Tall Order: Fighting Counterfeiting in China

One of the most important centers of counterfeit trade is China. In addition to originating roughly $1.2 billion of the $1.7 billion in counterfeit goods confiscated by U.S. law enforcement agencies in 2013, China hosts vast internal marketplaces — both online and off — where counterfeit goods are traded.[4]

To successfully reduce the negative effects of counterfeiting, many companies have found that a cross-functional team contributes a great deal to an aggressive, global anti-counterfeiting initiative.

Most importantly: To effectively choke off counterfeit sales, the strategy must focus on both distribution and promotional channels for counterfeit goods. The returns — in revenues, profits, and long-term brand value — will certainly make the effort worthwhile.

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1 Quintanilla, Carl. "War on Counterfeit Goods." CNBC. N.p., n.d. Web. 14 June 2013.

2 United Nations Office on Drugs and Crime. "Transnational Organized Crime: Let's Put Them Out of Business." Counterfeit Goods: A Bargain or a Costly Mistake? N.p., n.d. Web. 29 May 2014.

3 CNN. "Fake Golf Clubs Scam 'Duped' eBay Customers." CNN. N.p., n.d. Web. 23 September 2009.

4 United Nations Office on Drugs and Crime. "Transnational Organized Crime: Let's Put Them Out of Business."

About MarkMonitor

MarkMonitor, the leading enterprise brand protection solution and a Clarivate Analytics flagship brand, provides advanced technology and expertise that protects the revenues and reputations of the world's leading brands. In the digital world, brands face new risks due to the Web's anonymity, global reach and shifting consumption patterns for digital content, goods and services. Customers choose MarkMonitor for its unique combination of advanced technology, comprehensive protection and extensive industry relationships to address their brand infringement risks and preserve their marketing investments, revenues and customer trust. For more information, visit **markmonitor.com.**

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Clarivate Analytics accelerates the pace of innovation by providing trusted insights and analytics to customers around the world, enabling them to discover, protect and commercialize new ideas faster. Formerly the Intellectual Property and Science business of Thomson Reuters, we own and operate a collection of leading subscription-based services focused on scientific and academic research, patent analytics and regulatory standards, pharmaceutical and biotech intelligence, trademark protection, domain brand protection and intellectual property management. Clarivate Analytics is now an independent company with over 4,000 employees, operating in more than 100 countries and owns well-known brands that include *Web of Science, Cortellis, Thomson Innovation, Derwent World Patents Index, CompuMark, MarkMonitor* and *Techstreet,* among others. For more information, visit **clarivate.com**.

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MarkMonitor
Protecting brands in the digital world

Clarivate Analytics

EXHIBIT 2

Executive Summary

In Fiscal Year (FY) 2012, DHS and its agencies, CBP and ICE, remained vigilant in their commitment to protect American consumers from intellectual property theft as well as enforce the rights of intellectual property rights holders by expanding their efforts to seize infringing goods, leading to 691 arrests, 423 indictments and 334 prosecutions. Counterfeit and pirated goods pose a serious threat to America's economic vitality, the health and safety of American consumers, and our critical infrastructure and national security. Through coordinated efforts to interdict infringing merchandise, including joint operations, DHS enforced intellectual property rights while facilitating the secure flow of legitimate trade and travel.

In recent years, the internet has fueled explosive growth in the numbers of small packages of counterfeit and pirated goods shipped through express carriers and mail. In FY 2012, we heightened our efforts against the sources of these small shipments: the websites involved in the trafficking of counterfeit and pirated goods. In FY 2012, 697 such sites were taken down by ICE, with CBP handling the forfeitures. The number of IPR seizures remained somewhat consistent from 24,792 in FY 2011 to 22,848 in FY 2012. We believe the strategy of pursuing the sources of counterfeit goods will provide long-term results in decreasing the flow of counterfeit merchandise into commerce.

The MSRP of seized goods increased from $1.11 billion in FY 2011 to $1.26 billion in FY 2012, with an average seizure value of more than $10,450. At the same time, CBP and ICE made valuable advances to enhance their ability to combat IP theft in the future, including:

EXHIBIT 3

Executive Summary

Counterfeiting and piracy has increased substantially over the last two decades. Today, counterfeit and pirated products can be found in almost every country in the world and in virtually all sectors of the global economy. As policymakers grapple with allocating resources across multiple public policy challenges, better information on the full scope, scale, costs and impacts of counterfeiting and piracy is necessary to ensure that the appropriate resources and prioritization are given to combating counterfeiting and piracy.

Estimates of the level of counterfeiting vary but all estimates agree that counterfeiting represents a multi-billion dollar underground economy with hundreds of billions of dollars of counterfeit product being produced every year.

Building on the OECD's work

Most recently, the OECD endeavoured to address the lack of in-depth systematic evidence on counterfeiting and piracy and provide governments with a reliable, data-based assessment.

The OECD published an extensive report on the subject in 2008[1], and concluded that the value of counterfeited and pirated goods moving through international trade alone equalled $200 billion annually, a number they updated in 2009 to $250 billion[2].

In releasing their findings, the OECD stated,

"This total does not include the value of domestically produced and consumed counterfeit and pirated products and the significant volume of pirated digital products being distributed via the Internet. If these items were added, the total magnitude of counterfeiting and piracy worldwide could well be several hundred billion dollars more."

In addition the OECD explained that,

Counterfeiting and piracy "can have broader economy-wide effects on trade, foreign investment, employment, innovation, criminality, environment [...] and with respect to governments, counterfeiting and piracy have direct effects on tax revenues and government expenditures."

Taken together, the OECD report delineated four categories of impact, of which they provided quantitative estimates for only one: Counterfeit and pirated goods moving through international trade.

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1 OECD, The Economic Impact of Counterfeiting and Piracy, 2008 (hereinafter "OECD Report").

2 OECD, Magnitude of Counterfeiting and Piracy of tangible products: An Update, November 2009.

This study seeks to build on the OECD's work, by updating their estimates and more importantly, introducing and examining categories of impacts identified and discussed but not quantified by the OECD report – the value of domestically produced and consumed counterfeit products, the value of digital piracy, and impacts on society, governments and consumers.

- **Category 1: Counterfeit and pirated goods moving through international trade.** We update the OECD's estimate of the value of counterfeit and pirated goods moving through international trade, drawing on new customs seizure data indicating that the incidence of counterfeiting and piracy has increased relative to the 2005-based customs data used in the OECD's 2008 study.

- **Category 2: Value of domestically produced and consumed counterfeit and pirated products.** We develop a methodology, derived from the OECD's modeling work, to generate an estimate of the value of domestic manufacture and consumption of counterfeit and pirate products – thereby capturing an estimated value of fake products that do not cross borders.

- **Category 3: Volume of pirated digital products being distributed via the Internet.** We describe, evaluate and contextualize industry reports and academic studies on the value of digital piracy of recorded music, movies and software. We then use these studies to produce an estimate of the total value of digital piracy that has been calculated using consistent assumptions and methodology across these industries.

- **Category 4: Broader economy-wide effects.** We provide a summary of previous analysis aimed at identifying the broader economy-wide effects of counterfeiting and piracy.

Before discussing our findings, it is important to be clear about the nature and context of the analysis presented in this report. Since counterfeiting operates outside the law, estimating the exact level of counterfeiting and the harm it brings is extremely challenging. The activities of illegal businesses cannot be measured using the same techniques used for legitimate business concerns.

We have therefore used a variety of analytical approaches to reach our estimates, drawing on a range of sources of information and making conservative assumptions. Our methodologies are described in detail, and we are explicit about the assumptions that have been required to reach the estimates we present and their limitations. While the methods used cannot yield precise estimates, the results do offer compelling evidence of the broad global magnitude of counterfeiting and piracy.

Key findings

The following Table 1 compiles the set of findings we refer to as *the complete picture*, drawing together estimates for the total value of counterfeit and pirated products in 2008, along with projections for 2015. Notably, our estimates of impacts on the broader economy only include estimated impacts on the twenty G20 economies and are presently limited to 2008.

Table 1. The Complete Picture. Estimate of the total value of counterfeit and pirated products in 2008 and 2015, and impacts on the broader economy and employment

OECD Category	Estimate in $ billions (2008)	Estimate in $ billions (2015)
Internationally traded counterfeit and pirated products	$285 - $360	$770 - $960
Domestically produced and consumed counterfeit and pirated products	$140 - $215	$370 - $570
Digitally pirated products	$30 - $75	$80 - $240
sub total	**$455 - $650**	**$1,220 - $1,770**
Broader economy wide effects†*	$125	*$125 +*
Employment losses*	2.5 million	*2.5 million +*

Source: Frontier Economics

† Effects on government tax revenues, welfare spending, costs of crime health services, FDI flows

* Estimate limited to G20 economies

Global economic value

We estimate that, based on 2008 data, the total global economic value of counterfeit and pirated products is as much as $650 billion every year. Table 2 below provides a breakdown of our estimate. It shows that international trade accounts for more than half of counterfeiting and piracy (our updated estimate is $285 billion to $360 billion), domestic production and consumption accounts for between $140 billion and $215 billion and digitally pirated music, movies and software accounts for between $30 billion and $75 billion.

Table 2. Estimate of the total value of counterfeit and pirated products (2008)

OECD Category	Estimate (2008 data)
Internationally traded counterfeit and pirated products	$285 billion - $360 billion
Domestically produced and consumed counterfeit and pirated products	$140 billion - $215 billion
Digitally pirated products	$30 billion - $75 billion
Total	**$455 billion - $650 billion**

Source: Frontier Economics

It is important to note that these estimates are likely to provide a conservative estimate of the impact of counterfeiting and piracy. The estimates of the value of counterfeiting are based on 2008 data (the last year for which complete data was available), and given the rapid increase in counterfeiting and piracy observed between 2005 and 2008, this is likely to under-estimate the level of counterfeiting and piracy beyond 2008. It is for this reason that we have provided estimates to 2015.

It is also important to note that this study, following in the footsteps of the OECD report, has not attempted to estimate business losses associated with counterfeiting and piracy. This is primarily because the likely variations and other difficulties associated with estimating substitution effects across substantially different countries and industries introduces an additional level/degree of variables which could undermine our aim to as accurately as possible characterize the magnitude of counterfeiting and piracy.

Broader economy-wide effects

In addition to their work on economic impacts, the OECD examined – but did not provide quantitative estimates for a range of broader economy-wide effects: *"Counterfeiting and piracy can have broad economy-wide effects on trade, foreign investment, employment, innovation, criminality and the environment. Concerning the microeconomic effects, the sales volume, prices and costs of rights holders are impacted, as are investment, royalties and brand value. For consumers, counterfeit and pirated products may offer cheap alternatives to genuine goods but are usually of inferior quality. For certain types of infringing goods, the health and safety of consumers may be put at significant risk. With respect to governments, counterfeiting and piracy have effects on tax revenues, government expenditures, and, when corruption takes place, the effectiveness of public institutions. (p. 133)*

These social costs are far from insignificant and merit treatment sufficient to ensure that they are not overlooked when considering the full range of negative impacts resulting from counterfeiting and piracy. In an associated study[3] (excerpted in Chapter 3 of this report), Frontier explored the value and impact of these broader economy-wide effects. Notably, this work did not capture all of the thirteen "broader economy wide effect" cost-categories identified by the OECD; we only tackled impact of counterfeiting and piracy on government tax revenues, legitimate employment, increased costs of crime, economic costs on consumer health and safety, and downward pressures on FDI flows. Moreover, the scope of this report was limited to only the 20 countries comprising the "group of 20", and so will be an under-estimate of the global impact of counterfeiting and piracy. The findings, however, are relevant to this report and serve to complete the picture of the total impacts to "economy and society".

We found counterfeiting and piracy are estimated to cost G20 governments and consumers over $125 billion every year:

- of this, the G20 economies lose approximately $77.5 billion in tax revenues and higher welfare spending, $25 billion in increased costs of crime, $18.1 billion in the economic cost of deaths resulting from counterfeiting and another $125 million for the additional cost of health services to treat injuries caused by dangerous fake products; and
- a number of G20 economies may be missing out on higher FDI as a result of concerns over IPR enforcement. That lost investment could give rise to additional tax losses of more than $6.25 billion across the G20.

Employment

This report has not considered explicitly the impact of counterfeiting and piracy on employment. However, Frontier's previous study, which focused on the wider social and economic impacts of counterfeiting and piracy found that counterfeiting and piracy has significant negative impacts on employment across the G20 economies. Our previous analysis found that **approximately 2.5 million jobs have been destroyed by counterfeiting and piracy** – alternatively, if counterfeiting and piracy could be eradicated or seriously reduced, up to 2.5 million jobs could be created in the legitimate economies of the G20. It should also be noted that these estimates do not include secondary impacts on employment that may well be experienced by suppliers, retailers and other sectors in the supply chain.

[3] Frontier Economics, The Impact of Counterfeiting on Governments and Consumers, December 2009

While it is likely that many of those who lost their jobs have gone on to find reemployment, the personal and family trauma associated with even temporary unemployment should not be lightly discounted. For example, people may quickly get into arrears on mortgages or personal debts, have difficulty paying medical expenses (as benefits are often linked to employment) or be forced to relocate to find alternative employment.

Finally, it is important to note that our previous analysis focused only on the G20 economies and so are likely to under-estimate the negative global impacts of counterfeiting and piracy on employment.

A growing problem – projections to 2015

Based on the OECD's analysis, our work to update the OECD figures and a range of analysis by industry and academics, it would appear that the value and volume of counterfeiting and digital piracy is increasing rapidly. In order to understand the potential impact of this rapid increase, we have developed an estimate of the value of counterfeiting and piracy in 2015. Obviously, estimating what will happen to counterfeiting and piracy is a difficult exercise, and depends on many factors, including developments in the world economy, and action by business and governments to try to counter such activities. Nevertheless, it is helpful to understand what the total magnitude of counterfeiting and piracy would be in 2015, were current growth rates to continue.

The OECD's original report (based on 2005 data) estimates that the value of counterfeit and pirated products in trade equated to $200 billion. In 2009, the OECD increased this figure to $250 billion. Updating these trends using 2008 data to reflect increases in trade *and* seizures since 2005, we find that the value of counterfeit and pirated products in trade has increased by up to $160 billion (to $360 billion) over this period – this is an increase of around 22% per year. Were counterfeiting and piracy to continue to grow at even the much lower rate of 15% per year, it would imply that traded counterfeit and pirated products could be worth up to **$960 billion by 2015.** Similar increases for domestic counterfeit production and consumption imply estimates of up to **$570 billion by 2015**.

The findings also suggest that digital piracy has grown substantially over the last decade, to the point where it now accounts for between 6.5% and 12% of the total value of counterfeit and pirated products consumed. In some sectors, such as music, movies and software, digital piracy accounts for a substantially greater share of the total. It is also likely that digital piracy will continue to grow rapidly over the next decade as internet access grows and ever-faster broadband speeds facilitate illegal downloads and file sharing. Even using a highly conservative assumption, that digital piracy maintains its share of total counterfeiting and piracy, it could account for $210 billion by 2015. Alternative projections based on internet traffic growth suggest this figure could reach **$240 billion by 2015.**

Executive Summary

Together these estimates imply that the global value of counterfeit and pirated products could be up to **$1.77 trillion by 2015**.

Analytical approach

In this report we have sought to build on the work of the OECD to provide up to date estimates of the impact of counterfeiting and piracy in the four categories identified in the OECD's work. In some cases this has involved updating the OECD's analysis with more recent data, whereas in others it has involved developing new analysis, much of which is based on the OECD's analytical approach. The analysis in relation to each of the four impact categories is based on a combination of publicly available data and assumptions.

The publicly available data is from reputable sources such as national governments and the OECD, and is supplemented where necessary with data and analysis from industry associations, businesses and academia. We have based the assumptions used in the analysis on existing data and analysis where possible and have in all cases made the assumptions used as conservative as possible. For instance, in projecting the value of counterfeiting and piracy to 2015, we have assumed growths rates considerably below those observed between 2005 and 2008. The main body of the report sets out in detail the assumptions used in the analysis, the basis of those assumptions, and the impact that they have on our analysis.

It is important to note that the model does not include any multipliers, nor does it attempt to estimate the wider effects that counterfeiting may give rise to in terms of impact on the wider supply chain, investment by firms to prevent counterfeiting and piracy or potentially reduced investment and R&D incentives.

The analysis has been developed so that it can be used by national governments, independent agencies, industry sector associations or any other bodies seeking to identify and examine the costs and impacts of counterfeiting. Over time, we hope that if this approach is implemented by policymakers and other stakeholders at a national level, the reliance on assumptions in developing estimates can be substantially reduced.

Agenda for future research

Looking to the future research agenda, we believe that while it is important to have an understanding of global magnitudes in order to highlight the increasing threat to the global economy, more fine grained and detailed analysis is required on a country by country basis.

Only when the analysis is conducted on a country by country basis, can one identify in detail the negative impacts of counterfeiting and piracy, and the relative costs and benefits of significantly increasing enforcement activities.

Moreover, analysis carried out at the country level is likely to provide better quality, more accurate estimates, due to greater and more robust data. To demonstrate the extent to which the types of approach identified in this report can be applied at a country level, Annexe 1 provides an illustrative assessment of the magnitude of counterfeiting and piracy in the US economy.

Finally, we believe an important next step in the work to identify the impact of counterfeiting and piracy will be to develop a robust methodology for understanding the relationship between the magnitude of counterfeiting and piracy and business losses.