Dark Web and Trading of Illegal Drugs

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Abstract

Search engines do not show the content of deep web. Since deep web pages are not indexed their accessibility is not possible using regular search engines such as "Google". The Dark Web, on the other hand, is mostly available publicly – if the user knows the ways to find it, because it exists on an alternate layer of the internet. Such alternate layer enables the individuals to breed anonymity. Websites hosted on Dark Web can be used for both good and bad purposes. Dark Web has been used for criminal activities such as the distribution of child pornography, hacking rings, money laundering, and sales of weapons and drugs. It has major effect leading to illegal activities which are very difficult to trace. Although the business created by hidden services is estimated to be in millions. Fighting Narco-terrorism and to keep a check on the distribution of substance of abuse and illegal drugs online is the need of the hour. Thus, the present paper explores availability of drugs online and laws breached. Since, it is important to adapt new ways and techniques to counter drug addiction. It is important to make sure that the history of Silk Route is not repeated.

Keywords: Dark Web; Illegal Drugs; Drugs of Abuse; Tor; Narco-Terrorism; Bitcoins

Introduction

Boom of information technology has influenced all aspects of life from online shopping to internet banking. We are dependent on internet for functioning of life such that we have developed an obsession for using internet for smaller as well as larger purposes of life. Unlike earlier days when illegal activities were limited to the local access of criminals, the modern era gives a vast platform for criminals. It gives access to much ulnerable victims throughout world without the requirement of physical presence. Modus operandi of criminals also has been influenced with the evolution of internet. Such complex crimes demand advanced lines of investigation to be adopted by investigators. Online generation of money using porn industry is an old tactics. Additionally, more crimes have been linked with internet viz. bank frauds, human trafficking, distribution of illegal drugs and arms as well as many criminal activities related to terrorism.

Internet has become a popular place for selling and buying illicit drugs which reserves the anonymity of both the seller and the buyer [1,2]. To keep an eye on such transactions it is a necessity to continuously indexing the content online. Reserved data is created and maintained by various firms which can be retrieved using web resulting in a data which is not indexed with conventional search engines. These contents that are not indexed by standard search engines are also termed as deep web. It covers much larger size than the regular web which is used by users around the world. A small part of part of deep web is Dark Web which uses public networks but requires specific software, configurations for access [3,4]. Dark Web project came into existence after 9/11 attack which was aimed at tracking the terrorist activities online. According to a report by Hsinchun Chen of the University of Arizona researchers have determined the probability of becoming a suicide bomber is 2 per 10,000 [5-7].

A huge amount of funds are created by trading drugs using Dark Web, it poses a great difficulty in estimating the volume of drugs floating in such transactions, places they are shipped from and received, number of people involved, and overall extent of money generated in this industry [8]. Publicly Indexable Web (PIW) contains the maximum data searched and found by web crawler, which is like a drop in the ocean. It includes the websites which are available by using a hypertext links which are generally accessed by individuals worldwide [9,10]. Besides this there is a large portion of web which is not covered under publicly indexable web. Many databases are available using only HTML forms which are part of hidden web [9,10]. Among these hidden networks, one of the most talked about networks which is discretely used for criminal activities is The Onion Router (Tor). Encryptions in application layer of a communication protocol which is like the layers of onion. Tor is free software which was initially developed by the U.S. Naval Research Laboratory and independent researchers in 2002, for protecting U.S.

Intelligence communications online by using the anonymous communication offered by Tor. Operation Ominous which led to shutting down of around 400 sites being used for illicit purposes in 2014 revealed that Tor could be de-anonymised. Although a lot of speculations run behind this weakness of tor which enables tracking of users. Since, Tor is designed in such a way that its codes can be viewed and integrated with the user's software. Users prefer Tor for the privacy it provides since it is difficult to trace back the online activities viz search history, emails, messages, social activities online etc [11]. The ability to communicate confidentially using Tor is exploited by many criminals for committing crimes with the help of Tor. It poses a challenge to investigators to keep a check on such activities online. Therefore, the present paper aims at analyzing such websites providing illicit drugs just from a click [12,13].

Methodology

Tor browser was preferred for the current study since it is one of the most sought after browser when it is about Dark Web. Websites available at the Tor-shop web services were observed carefully. Each menu options present on the websites were searched and looked up for detailed information. Listings of drugs and products related to them which were present on six tor shops supported by the Tor browser were analyzed. Data was entered including the links of the site, name of the shops, kinds of drugs offered online, further classified drugs, quantity of drugs, price of drugs (Both in virtual currency i.e Bit coin and others mentioned), shipping countries and postage options. Statistical graphs were plotted for understanding the depth of the drug activities on the Dark Web.

Bit coin

Bit coin is a unique kind of e-cash system. Although Bit coin has the usefulness in various types of financial transaction, but it poses risks to privacy. Since pseudonyms are used for maintaining privacy during transactions. Bit coin was developed by a software developer named Satoshi Nakamoto, according to him it is an electronic payment system based on mathematical algorithm. Bit coin is an integral part of Crypto currency [14-16].

Results

Accessibility of Tor browser allows the user to avail the service s provided by the same. Under operation onymous many dark net markets were exposed which were involved in illegal trading. Around 1$ million Bitcoins and €180,000 in cash, gold, silver and drugs was seized [17]. Silk route was one of such online markets found on Tor browser known for the selling of illicit drugs online. Further information on the Silk Route revealed that it was a platform for sellers and buyer to come together for carrying out trading of drugs. The website creators just allowed the sellers to advertise products and did not managed any stocks of drugs but they received a commission for each transaction of drugs [18,19]. A study also reports a large range of products advertised as "Legal Highs" in the UK. These

products were being sold online and they do give a hint of illicit drugs for the interested consumers. The study analyzes around 1308 products. Average amount at which the product was sold was 9.69 pounds.

Types of products analyzed had 46.6% of pills, 29.7% of smoking material and 18.1% of a single plant material. Broséus J et al. [20]. report the range of drugs available on crypto markets including cannabis, ecstacy, stimulants, psychedelics and opiods, in maximum demand respectively. Crypto markets are website which uses encryption for maintaining anonymity; the study mentions eight such crytomarkets viz. Agora, Evolution, Silk Road 2, Cloud-nine, Pandora, Hydra, Andromeda and Blue sky [21]. Although as web is very dynamic phenomena the actual amount of products cannot be defined. As every day a new website comes under the scanner of web. After a detailed analysis of the hidden services on Tor shops we found that there were popularly four kinds of drugs sold under categories of stimulants, depressants, psychedelics and opiates among which maximum number of drugs being sold were stimulants as shown in (Figure 1). Which included Cocaine, Speed (chemically amphetamine), Crystal methamphetamine and ecstacy also named as MDMA (chemical name 3,4-Methylenedioxymethamphetamine).

Figure 1: Kind of Drugs.
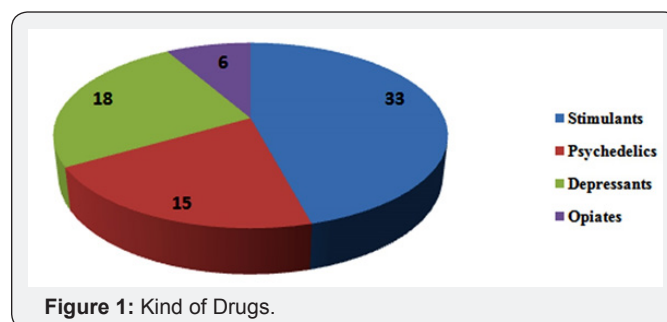
Probably the circulation of these drugs is easier since they can be easily confused with medicines. Also these are popular among addicts for fast and strong effects it provides due to its form as compared to drugs of plant origin like cannabis or opium. As depicted in (Table 1). Showing the name of the markets and countries drugs are shipped from, out of the six sites covered in the study three of them are shipped from USA which shows an alarming necessity of USA to control these activities. According to graphs2 and 3 which shows the maximum and minimum price list of products of drugs online, the maximum amount of money being floated was on cannabis which shows various ranges of products like marrow hash, bubblegum, purple kush, Afghani kush, OG kush and original haze. Ecstacy and speed was sold at 0.011 and 0.013 bit coins respectively with quantities of drugs ranging in micrograms. Total amount when calculated for the maximum price it gives 27.188 bit coins which is about 19333 USD. Since each drug had about 4-5 types of products the total amount of business generated is more than five times of the total calculated. A commission of 1% for each sale was offered to customers who circulate the link to others. Discounts on bulk

purchasing of drugs was also observed (Figure 2). Showing the maximum price of drug products in bit coin of different types of drugs.
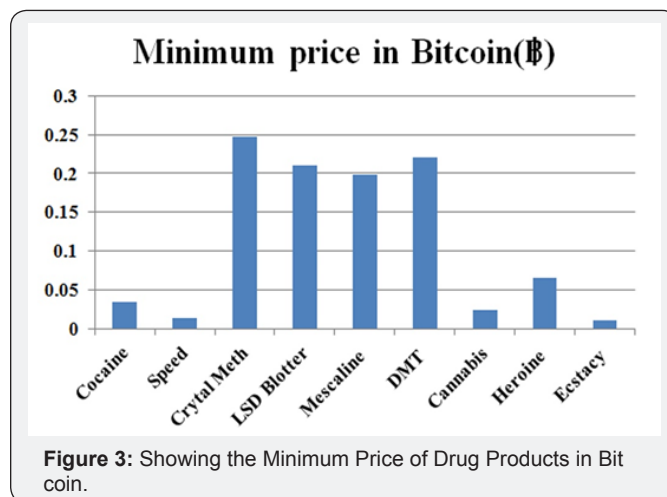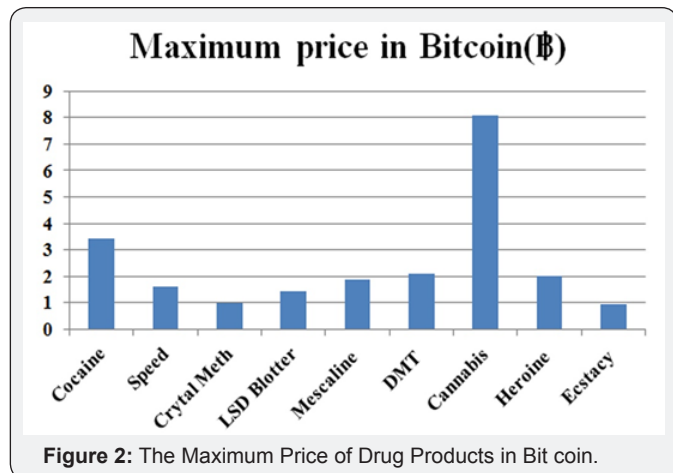

Figure 2: The Maximum Price of Drug Products in Bit coin.

Table 1: Listing of Websites and Their Respective Shipping Destinations.

Name of Sites	Shipping From
Bitpharma-biggest European	Germany & France
DeDope-German Weed Shop	Germany
Brainmagic-biggest.onion psychedelics store	U.S
Cannabis UK-UK Wholesale Cannabis Supplier	U.K
smokebles-finest Organic Cannabis	U.S
Peoples Drug Store-The Dark webs	Canada & U.S.A

The peoples drug store listed among the drug shops also indicated sold out drugs which indicate the activeness of the site. It is claimed that Tor is used by terrorist organizations too. These finances generated by trading illicit drugs online are used by such organizations for aiding their terror activities (Figure 3). Showing the minimum price of drug products in bitcoin of different types of drugs. Therefore, it becomes a responsibility of not just one country or organization to keep a check on such Dark Web networks but we need to come together for to overcome this hidden threat to humanity [22-24]. Since the Tor hidden services allow the criminals to maintain their anonymity online, thus tracking down their IP addresses is very difficult. Unlike other cybercrime like salami attack, data diddling, hacking etc the technical zone is less helpful in tracing a criminal on dark web market. For example, arrest of drug dealers on the name of 'The Farmer's Market' was a rare incidence but it can't be rule for all. Therefore, traditional policing is equally important to locate and arrest drug dealers selling online parallel with the current measures to keep a check them [25].

Figure 3: Showing the Minimum Price of Drug Products in Bit coin.

Conclusion

Virtual world of crimes are rarely explored which has such a strong grip and control on crimes all around. Since these kind of online networks are anonymous it is difficult to trace the culprits. It becomes inevitable to keep studying the Dark Web for knowing the activities of such criminals. In fact it will not be incorrect to say that these sites can be helpful in locating the kingpins of drug mafia. As it is not easy for a drug peddler to ideate and maintain such sites. A group of drug dealers is a prerequisite for operating at such levels. Apart from this it is major issue for the society if illicit drugs are a click away. It poses danger to children and society as a whole. Easy availability may lead to more number of consumers later turning into addicts.

Aiding of terrorist activities is another area of concern. Looking at the current scenario where terrorism is threat to all developing and developed nations studies related to it is the need of the hour. It gives direction for creating an effective mandate, drug policies, vigilant postal services etc to get a must check on them for the betterment of the society. One of the anonymous network i2p just like Tor came into existence in 2003. It also enables hosting of websites anonymously [25]. Hence, such sites keep popping up with a new version or other, demanding constant analysis which could help in investigations and further aid in restricting the selling of illegal drugs online, gradually benefiting the society in a long run.

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