

# Pharmaceutical Crime on the Darknet

## A study of illicit online marketplaces



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*“The online marketplace for illicit drugs is becoming larger and more brazen. [...] If the past trend continues, it has the potential to become a popular mode of trafficking in controlled substances in years to come.”*

-World Drug Report 2014, United Nations Office on Drug and Crime (UNODC)

## Executive Summary

- Pharmaceutical crime poses a grave danger to public health. Falsified medicines undermine people's faith in the health care system, while also threatening the lives of the most vulnerable members of society: the sick and frail. In this regard, the Internet has become a catalyst for illicit online pharmacies, marketing falsified medicines to the public.
- Today, several online market places on Darknets can operate with virtual impunity from law enforcement control. These market places, such as Silk Road and Evolution Marketplace, offer prescription medicines for sale to the public.
- Before it was shut down in November 2014, the most commonly advertised drug on Silk Road 2.0, formerly the largest Darknet market place, was prescription medicines. Among the prescription medicines, the most commonly advertised therapeutic category was "Relaxants", where the main medicine type advertised was benzodiazepine.
- Today, Evolution is one of the biggest Darknet marketplaces and similar to Silk Road 2.0, prescription medicines together with cannabis are the most advertised products. For Evolution, the most commonly advertised therapeutic categories were "Stimulants", "Relaxants" and "Other" types of medication.
- The Darknet is changing the nature of cybercrime, by providing anonymity to criminals – both in terms of online access, through anonymizing software such as P2P or Tor, and in terms of online payment, through crypto-currencies such as Bitcoin.
- In order to combat this criminality and threat to public health, law enforcement agencies need to develop their own cybercrime units that will have the appropriate knowledge and equipment to efficiently investigate cybercrime on the Darknet. To this end, the INTERPOL Global Complex for Innovation (IGCI) was created to support member countries.
- The presence of pharmaceutical crime on the Darknet is a truly global problem, with shipments being sent across the world between source, transit and destination countries. Therefore, international cooperation and interagency cooperation needs to be further developed to effectively intercept shipments and conduct back-tracking investigations in order to protect public health.

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## 1 INTRODUCTION

The trade of counterfeit and illicit<sup>1</sup> medicines is a truly global criminal phenomenon affecting all countries as source, transit or destination points. Patients across the world are putting their health, even life, at risk by unknowingly consuming fake or unauthorized medicines or those that have been altered, diverted, badly stored or have passed their expiry date. Combined with growing consumer demand, technological advancement, namely the widespread use of the Internet, the advertisement, sale and supply of such illicit and counterfeit medicines from unauthorized and unregulated websites have become a worldwide and continually expanding problem.

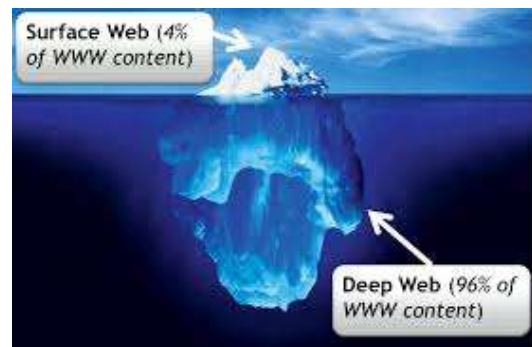
This analytical report examines the extent of the problem of pharmaceutical crime on the Darknet, through a case study of the largest market places on the Darknet: Silk Road 2.0 (which was later suspended by law enforcement authorities) and Evolution Marketplace (which is still operating). The main aim of these two case studies is to examine the extent of pharmaceutical crime in one market place on the darknet, and to promote law enforcement awareness of this emerging crime area.

By using a methodology that monitors the number of adverts of prescription medicine on the two main market places on the Darknet – Evolution and Silk Road – this study seeks to analyse the extent of which these medicines are sold on the darknet in comparison to other illicit drugs and products<sup>2</sup>. Although the results from two case studies cannot be extrapolated to the entire Darknet, the study highlights an emerging crime area: the extent of the sales of prescription medicines on two market places on the Darknet.

The report has been made in collaboration between the Research and Innovation Sub-directorate, at the INTERPOL Global Complex for Innovation (IGCI) and INTERPOL's Medical Product Counterfeiting and Pharmaceutical Crime (MPCPC) Sub-directorate.

### 1.1 The Deep Web

“What we commonly call the Web is really just the surface. Beneath that is a vast, mostly uncharted ocean called the Deep Web.”<sup>3</sup> The term the Deep Web is a metaphor for fishing, or crawling, in an ocean of information; although a user can search the surface of the sea (surface web) using the nets cast by traditional fishing vessels (search engines), there is still an ocean of information buried deeper down, where the traditional fishing nets cannot reach. This is the Deep Web. Unlike the surface web, which can be explored through familiar search engines such as Bing, Google or Yahoo, the Deep Web is not as easily accessible for the general public and contains information that is not searchable through the aforementioned conventional search tools.



*Approximately 96 per cent of the world wide web-content is available in the Deep Web.*

<sup>1</sup> Illicit medicines include unlicensed and controlled/banned substances.

<sup>2</sup> It should be noted that INTERPOL has not in any way interacted with the buyers or sellers of illicit substances on the deep web, but merely observed the open source statistics surrounding the illicit trade of these substances.

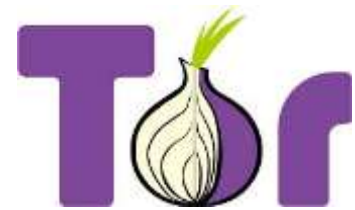
<sup>3</sup> Pagliery, Jose, 2014. “The Deep Web you do not know about”:

<http://money.cnn.com/2014/03/10/technology/deep-web/>. Accessed on 24 June 2014.

## 1.2 Darknets

Within the Deep Web resides Darknets. A darknet is a routed allocation of IP address space that is not discoverable by any usual means. The term is used to refer to both a single private network and the collective portion of Internet address space that has been configured in that manner. Technically, a darknet is a variation on a virtual private network (VPN) with additional measures in place to ensure that the network and IP addresses of members are not discoverable. The purpose is to hide not only the communications themselves but the fact that information is being exchanged.

In order to access the Darknets, a user can use special anonymizing software. One of the most commonly used so-called "Darknets"<sup>4</sup> is The Onion Router (commonly known as "Tor"), which anonymises the user's IP-address by relaying it through different layers of Tor-enabled computers around the world. This method was first developed by the US Navy Research Lab to encrypt military communications. Metaphorically, the process resembles that of passing through the different layers of an onion. Once the user is connected to the Darknet, he or she can access the Darknets marketplaces<sup>5</sup>.



Although Tor is currently the largest of the darknet infrastructures, INTERPOL's Cyber Research and Innovation Sub-directorate also researches two other darknets:

- The Invisible Internet Project (commonly known as "I2P"), is currently the second largest darknet. Less populated compared to Tor but I2P holds features that allow it to be more stable in building an anonymous infrastructure. Currently there are many organized crime hubs on I2P which are operational. It is important to note that I2P in some cases is operating as a mirror network to Tor. For example, one illegal market place (named simply "marketplace") on I2P [<http://themarketplace.i2p>] also operates on Tor [<http://43y5mwjvhxd6zf7v.onion>]. The I2P site operates as a disaster recovery and contingency plan for the Tor façade.
- Freenet, the smallest among the three networks. Currently used for chatrooms, accessible by invitation only, and private encrypted discussions. Facilitators of crime, exploits dealers, child sexual offenders and others can today be found chatting on Freenet.

*Tor is an open network that ensures the user's anonymity online.*

## 1.3 Bitcoin

By using the crypto-currency Bitcoin on the internet in general and Silk Road 2.0 in particular, transactions become very hard for law enforcement to trace. "Bitcoin is a consensus network that enables a new payment system and pseudo-anonymous digital money. It is the first decentralized peer-to-peer payment network that is powered by its users with no central authority or middlemen. From a user perspective, Bitcoin is pretty much like cash for the Internet. [...] Bitcoin is the first implementation of a concept called "crypto-currency"<sup>6</sup>, which [is] [...] the idea of a new form of money that uses cryptography to control its creation and transactions, rather than a central authority."<sup>7</sup>



*Bitcoin is a virtual crypto-currency which is commonly used in online market places such as Silk Road 2.0.*

<sup>4</sup> A darknet is a private network where connections are made only between trusted peers.

<sup>5</sup> See Appendix I for an overview.

<sup>6</sup> A *cryptocurrency* is a medium of exchange using cryptography to secure the transactions and to control the creation of new units. *Cryptography* is the practice and study of techniques for secure communication in the presence of third parties (so-called adversaries).

<sup>7</sup> [www.bitcoin.org](http://www.bitcoin.org). Accessed on 28 July 2014.

Once the payment in Bitcoins has been transferred the money is usually held in an escrow (a trusted middle man) until delivery occurs, with missing packages qualifying for partial refunds.

## 1.4 Methodology

The data for this report was gathered by INTERPOL through the monitoring of trends on marketplaces Silk Road 2.0 and Evolution on the Darknet during a six month time period, from June 2014 until December 2014. The data was compiled by a Cyber Threat Researcher at IGCI approximately once per month and collated by an MPCPC analyst. The research regarding Silk Road 2.0 was interrupted when the site was shut down in November 2014. Therefore, INTERPOL has only been able to use data on Silk Road 2.0 from June 2014 until November 2014. The number of adverts remains fairly stable over time and INTERPOL has calculated the median level of adverts for each market place. Although the numbers do not remain constant, there has been no significant discrepancy over time in the number of adverts for each drug section, therapeutic category or medicine type was identified. On the contrary, the number of adverts in each section and for each category remained fairly stable.

## 2 THE DARKNET MARKETS

This section will briefly explain the background and infrastructure of the largest marketplaces on the Darknet.

In total, there are approximately 29 different market places on the Deep Web. Below are the top three marketplaces with the number of users as of November 2014, before Silk Road 2.0 was shut down. Due to the fact that Agora requires the user to be admitted by invitation only, INTERPOL has restricted the research of the Darknet to the two marketplaces with the highest amount of users.

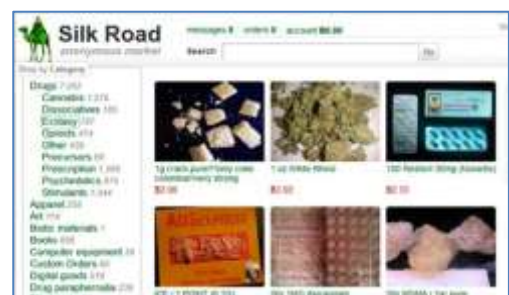
	Name	Number of users	Information
1	Silk Road 2.0	22,756 users	Shut down in November 2014
2	Evolution	12,444 users	
3	Agora	11,904 users	Users are admitted by invitation only

Source: INTERPOL Cybercrime Research and Innovation Sub-directorate

### 2.1 Silk Road and Silk Road 2.0

With approximately 22,000 registered users<sup>8</sup>, Silk Road was the largest marketplace for illicit substances on the Darknet and worked similar to Amazon.com on the surface web. The FBI's cyber-crime unit has named Silk Road "the most sophisticated and extensive criminal marketplace on the Internet today"<sup>9</sup>. This online marketplace had a user friendly interface, but instead of legal products a user can find anything from illegal drugs and passports to hitmen.

The combination of using both Tor, which anonymizes the IP address, and Bitcoins, which anonymizes the transaction, made Silk Road highly successful since it never stored any transaction or shipping details of buyers or sellers. This presents a particular challenge for law enforcement agencies since it makes investigations very hard to conduct without any digital fingerprints. Nevertheless, on 1 October 2013,



<sup>8</sup> IGCI, Dark Web Monitor, Research and innovation data.

<sup>9</sup> Laing, Aislinn, 2014. "Silk Road website was Internet's 'most sophisticated criminal marketplace'": <http://www.telegraph.co.uk/news/worldnews/northamerica/usa/10352294/Silk-Road-website-was-Internet's-most-sophisticated-criminal-marketplace.html>. Accessed on 28 July 2014.



after a long-term investigation, a joint operation between US law enforcement agencies resulted in the arrest the operator behind Silk Road in San Francisco: Ross Ulbricht, a 29-year old physics graduate. The FBI estimates that Ulbricht profited approximately USD 80 million from commissions through Silk Road. In total, it is estimated that Silk Road's revenue was USD 1.2 billion in sales during its more than two years of existence<sup>10</sup>.

In November 2013, almost one month after the arrest of Ulbricht and suspension of Silk Road, it was reported that Silk Road 2.0 was online and operated by former administrators of Silk Road<sup>11</sup>.

However, one year later – in November 2014 – the FBI and Europol conducted a joint operation codenamed Onymous and took down Silk Road 2.0. The person who is suspected of operating the site, 26-year old Blake Benthall (alias "Defcon"), was arrested in San Francisco. The FBI claims that they managed to infiltrate the launch of the new Silk Road 2.0 and that investigators were granted moderator status on the Silk Road 2.0's forums<sup>12</sup>. Within hours of the shutdown of Silk Road 2.0, another site was launched: Silk Road 3.0<sup>13</sup> both on TOR and I2P.

## 2.2 Evolution Marketplace

Evolution was launched in early 2014 as an online black market operating on Darknet. During its first few months Evolution grew rapidly, which can partly be attributed to law enforcement seizures of some of its competitors during the six-month-long investigation codenamed Operation Onymous, carried out in November 2014 by Europol and US law enforcement agencies. Today, Evolution is one of the biggest darknet market places.

The Evolution Marketplace is similar to its predecessors and peers in many ways. Users can browse a selection of wares, offered by a variety of different vendors and find everything from heroin to submachine guns for sale<sup>14</sup>.

In order to avoid fraudulent behavior by users – such as buyers who do not pay or falsely claim a package never arrived, as well as sellers who insist on receiving payment without actually shipping the product – Evolution also has its own rating system. In many ways, this feedback system is similar to what a user would find on legitimate marketplaces on the surface web, where buyers and sellers can be rated according to customer satisfaction. In addition, there is also a settlement system where administrators can mediate between the parties if either the seller or buyer feels cheated.

Evolution Marketplace prides itself as having high customer satisfaction ratings. For example, here is what Evolution Marketplace users write on the surface web: "[Evolution Marketplace's] commitment to customer service is above and beyond what you'd expect from an illegal online black market. Users have praised their responsive support, and they've even hired a PR rep that hangs out on message boards and responds to complaints, handles interviews, and the like."<sup>15</sup> Evolution also markets itself as being faster than many of the competing marketplaces: "When you're operating behind multiple layers of encryption in the dark corners of the internet, a little extra speed is quite welcome."<sup>16</sup>

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<sup>10</sup> *Forbes staff*, 2014. "The Story Behind Silk Road: Photos of Ross Ulbricht and Federal Evidence": [www.forbes.com/pictures/mhl45egjih/ross-ulbricht-8/](http://www.forbes.com/pictures/mhl45egjih/ross-ulbricht-8/). Accessed on 28 July 2014.

<sup>11</sup> Greenberg, Andy, 2013. *Forbes*. "'Silk Road 2.0' Launches, Promising a Resurrected Black Market for the Dark Web": [www.forbes.com/sites/andygreenberg/2013/11/06/silk-road-2-0-launches-promising-a-resurrected-black-market-for-the-dark-web/](http://www.forbes.com/sites/andygreenberg/2013/11/06/silk-road-2-0-launches-promising-a-resurrected-black-market-for-the-dark-web/). Accessed on 28 July 2014.

<sup>12</sup> <http://www.businessinsider.com/fbi-silk-road-seized-arrests-2014-11>.

<sup>13</sup> <http://www.businessinsider.com/theres-already-a-silk-road-30-2014-11>.

<sup>14</sup> [www.evolutionmarketplace.com](http://www.evolutionmarketplace.com), accessed on 23 February 2015.

<sup>15</sup> [www.evolutionmarketplace.com](http://www.evolutionmarketplace.com), accessed on 23 February 2015.

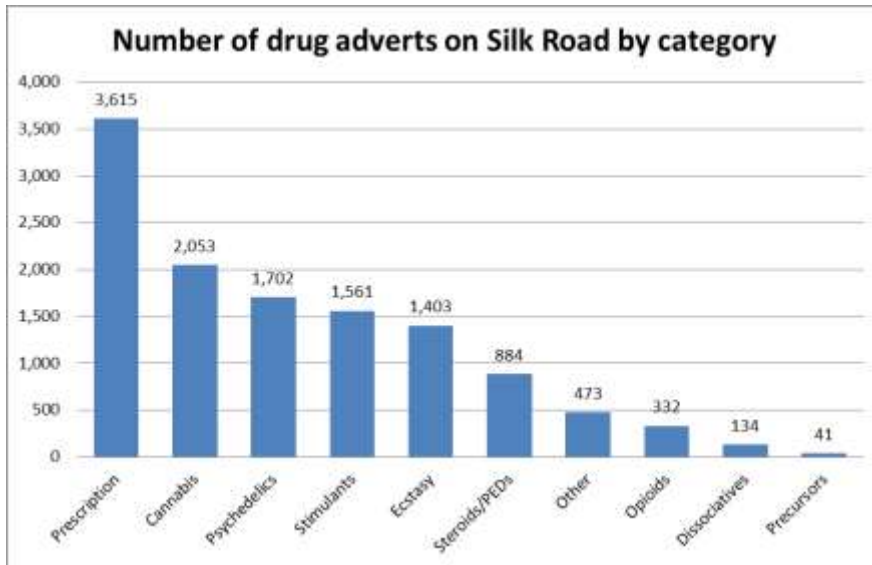
<sup>16</sup> [www.evolutionmarketplace.com](http://www.evolutionmarketplace.com), accessed on 23 February 2015.



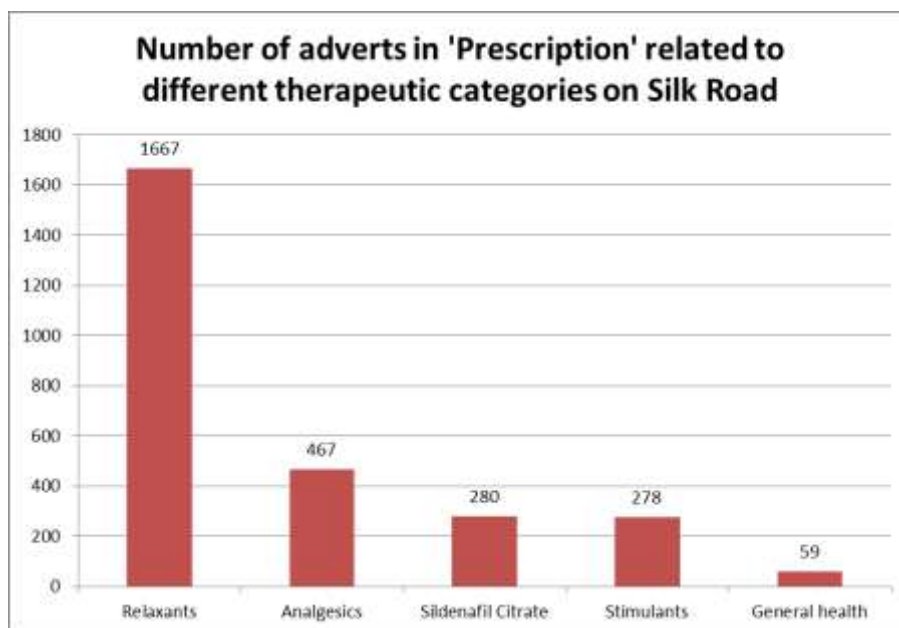
### 3 RESULTS

This section presents the findings of the collected and analysed data, divided into two sections: First, Silk Road 2.0, and second, the results for Evolution Marketplace.

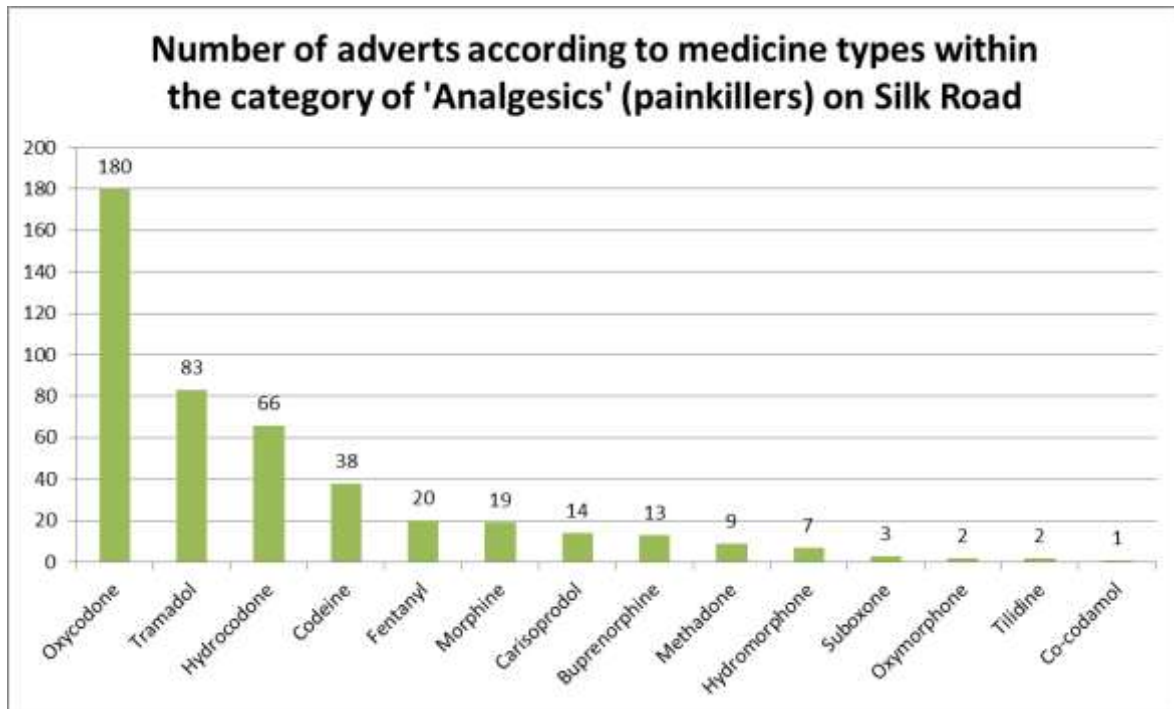
#### 3.1 Silk Road 2.0



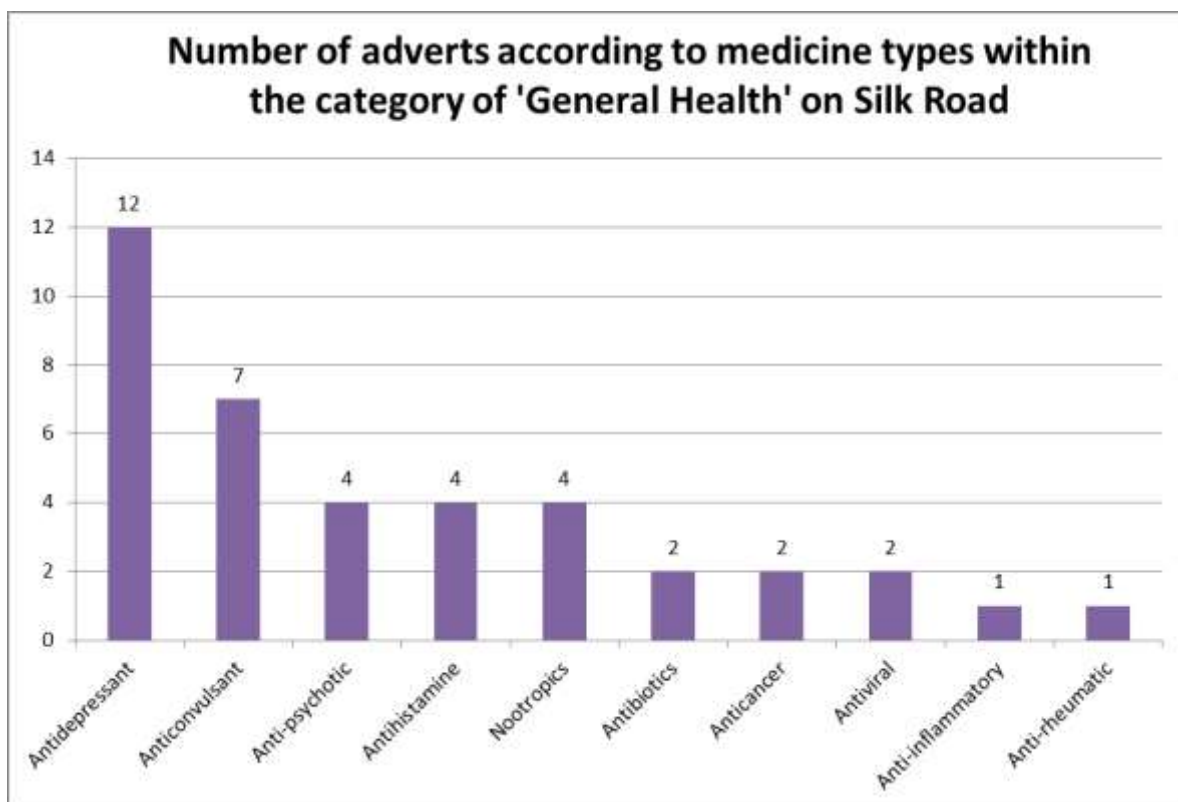
More than 10,000 advertisements are posted in the section entitled "Drugs" on Silk Road 2.0. When we break down these numbers by using Silk Road 2.0's own categorisation system, we find that the largest proportion of drugs advertised on Silk Road 2.0 relate to prescription medication. Prescription medication accounts for 30 per cent of the total amount of drug advertisements on Silk Road 2.0 – compared to Cannabis, which is the second most advertised drug at 17 per cent.



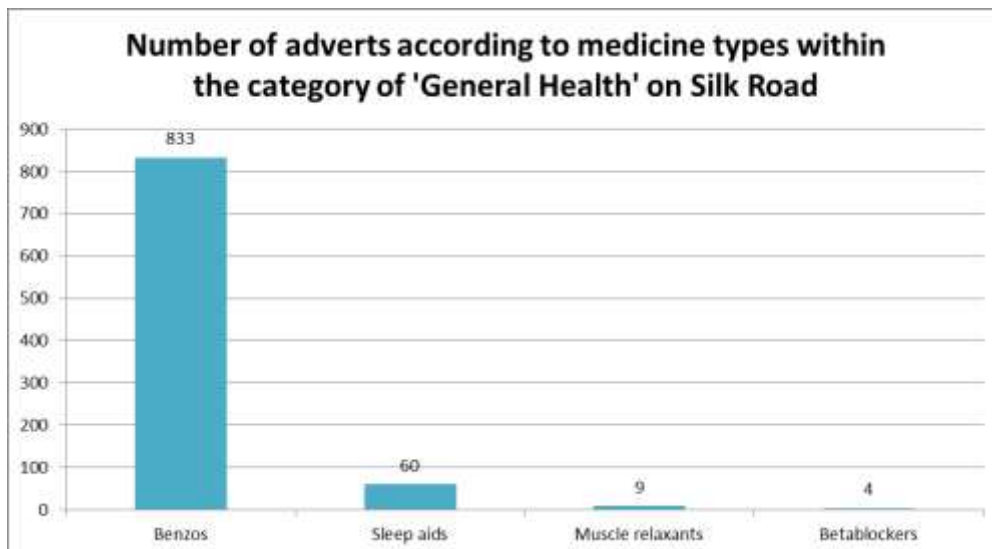
When studying the category entitled "Prescription", and again using Silk Road 2.0's own therapeutic categories – Analgesics (painkillers); General Health (e.g. antidepressants, antipsychotic, anticonvulsants); Relaxants; Sildenafil Citrate (mainly erectile dysfunction medication); and Stimulants – the most prominent category of prescription medicine that is advertised are Relaxants.



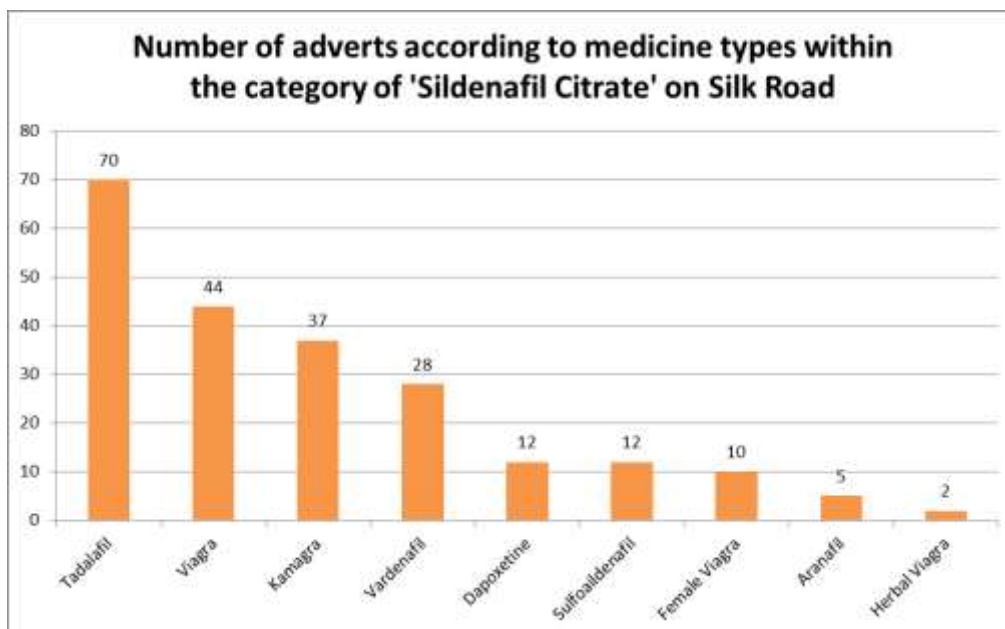
If we examine the medicine types within each therapeutic category, starting with Analgesics (painkillers), the most commonly advertised medicine is Oxycodone. Oxycodone is a opioid pain reliever prescription medicine that treats moderate to severe pain during a longer period of time, for example after an operation.



In the category of General Health items, the most commonly advertised medicine is antidepressants. However, the overall number of advertisements in this therapeutic category is considerably lower compared to the other therapeutic categories.



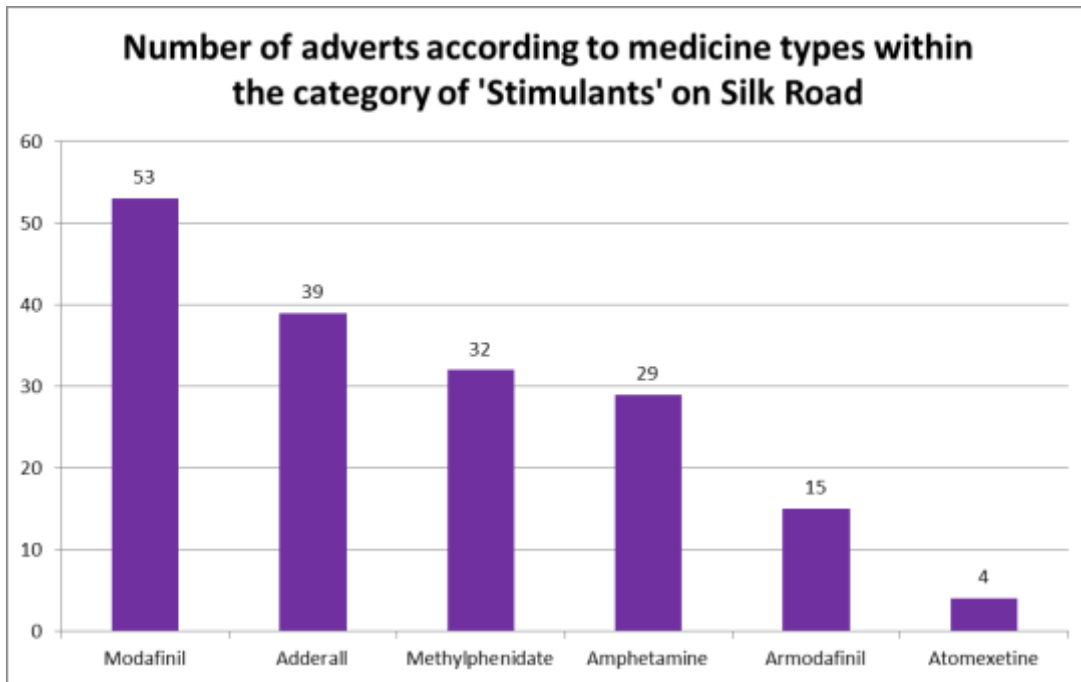
For the category of Relaxants, the vast majority of advertisements relate to Benzos. Benzo refers to benzodiazepine, which is a psychoactive drug that is part of a class of agents that work on the central nervous system. Normally, benzodiazepine drugs are prescribed to treat anxiety, insomnia, alcohol withdrawal and panic disorder. It was first introduced as a medicine in the 1950's and quickly became a popular drug for treating anxiety disorders. For addicts, the combination of alcohol and benzodiazepine also became a way of achieving a sensation of both calm and euphoria. However, according to an article in the journal "Alcohol Research & Health," alcohol and benzodiazepine have a synergistic depressant effect on the central nervous system. In addition, memory losses, or so-called blackouts, is increasingly likely when these substances are combined.<sup>17</sup>



The vast majority of medicine types in the category of Sildenafil Citrate relate to the treatment of erectile dysfunction (ED) medication. Prescription medicines such as Cialis, Kamagra, Tadalafil and Viagra are well-known on the Internet and among the general public for treating ED. Furthermore, for several year's INTERPOL's Operation Pangea<sup>18</sup>, which focuses on combatting illicit online pharmacies, has been reporting the seizure a large amount of ED medication.

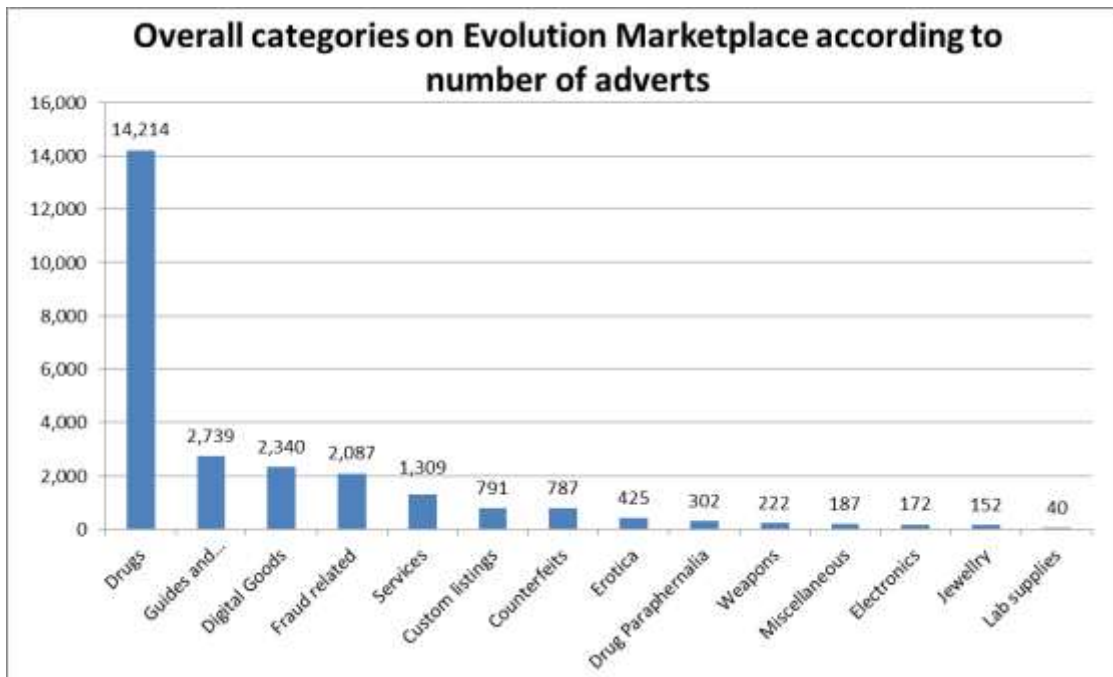
<sup>17</sup> <http://www.alcoholic.org/research/what-are-the-effects-of-mixing-benzodiazepine-and-alcohol/>. Accessed on 29 July 2014.

<sup>18</sup> For more information, please visit: <http://www.interpol.int/Crime-areas/Pharmaceutical-crime/Operations>.

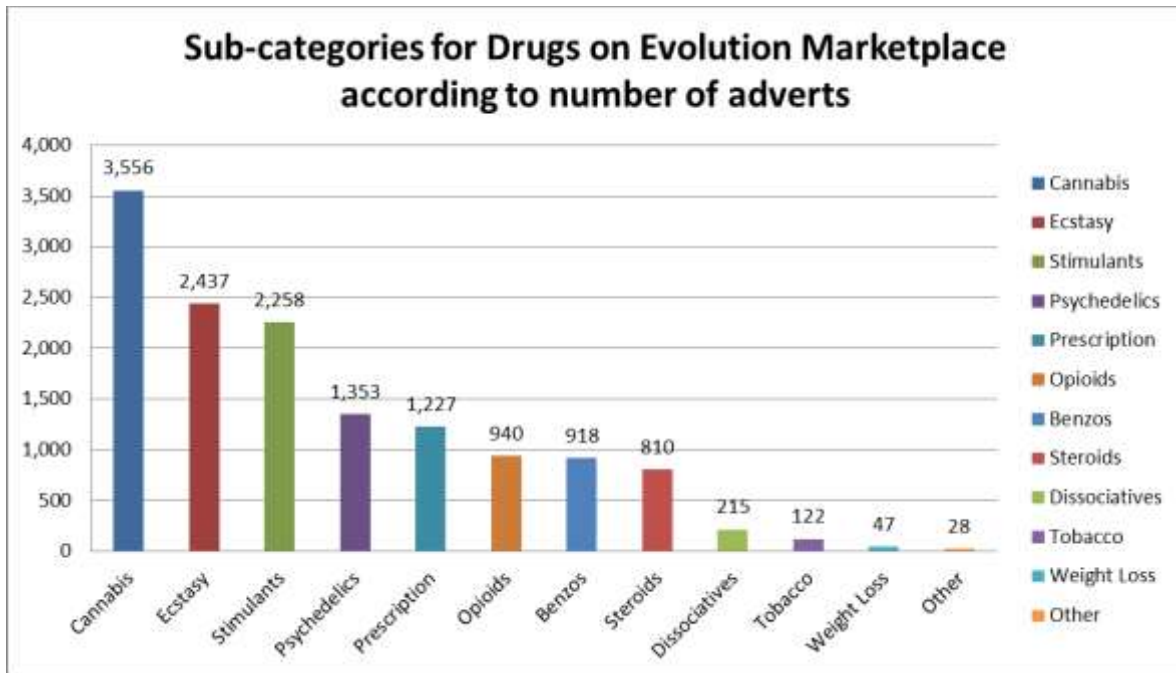


Modafinil is a prescription drug that improves daytime wakefulness in people with, for example, narcolepsy, or who are sleep deprived from working night shifts. Similarly, Adderall is a psychostimulant prescription medicine that is used to treat attention deficit hyperactivity disorder (ADHD) and narcolepsy. The third most popular prescription stimulant, Methylphenidate, is also a medicine that treats ADHD and narcolepsy.

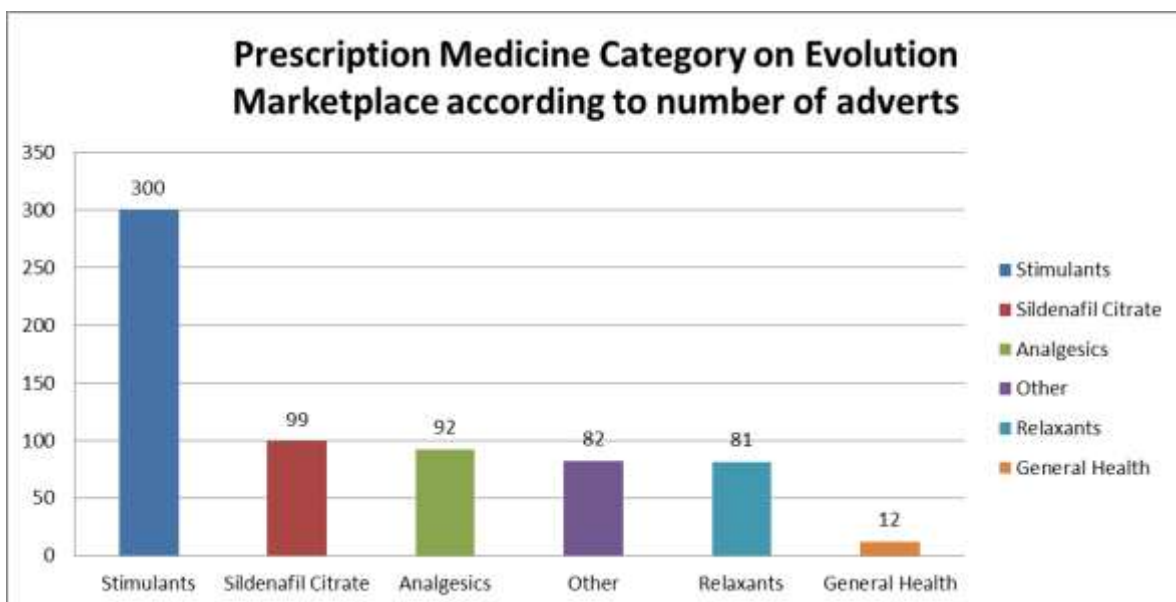
### 3.2 Evolution Marketplace



Similar to Silk Road 2.0, the vast majority of adverts on Evolution relate to drugs (14,214 adverts) compared to the second most common category “Guides and Handbooks” (2,739 adverts).

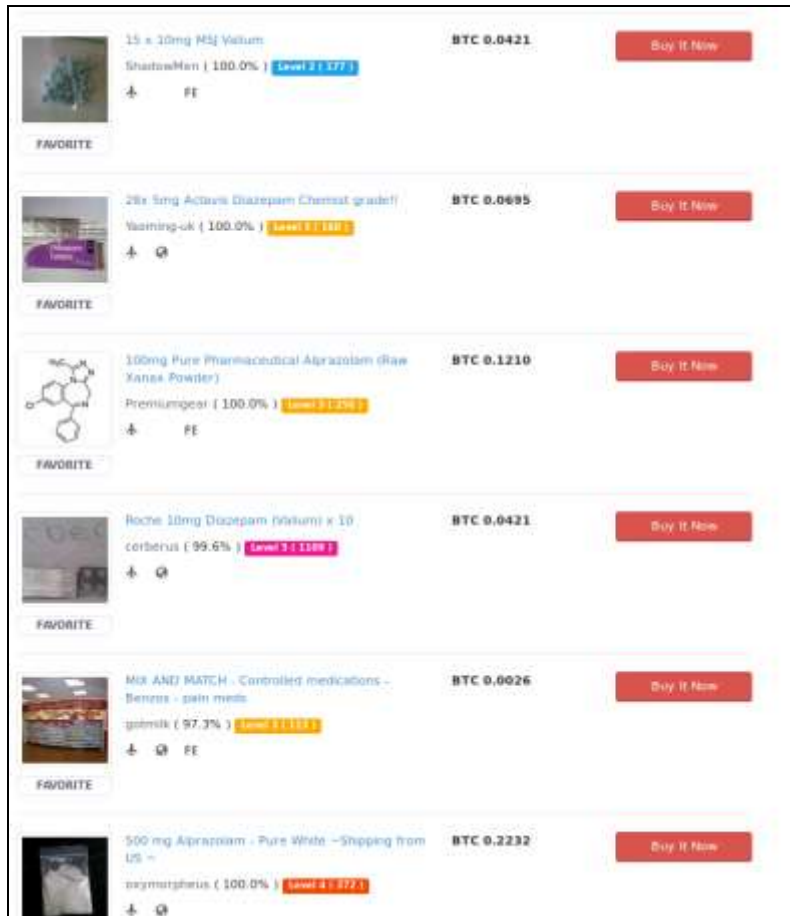


On Evolution, 9 per cent of the total amount of advertised drugs can be classified as prescription medicines. However, if we also include the categories of “Stimulants” and “Benzos”, which often contain prescription medicines, the percentage could be as high as 32 per cent. On Evolution, cannabis is the largest drug advertised (26 per cent). Other commonly advertised medicines among the prescription category on Evolution are different types of “Ecstasy” and “Stimulants”, commonly referred to as “uppers”, which temporarily increase alertness and energy.

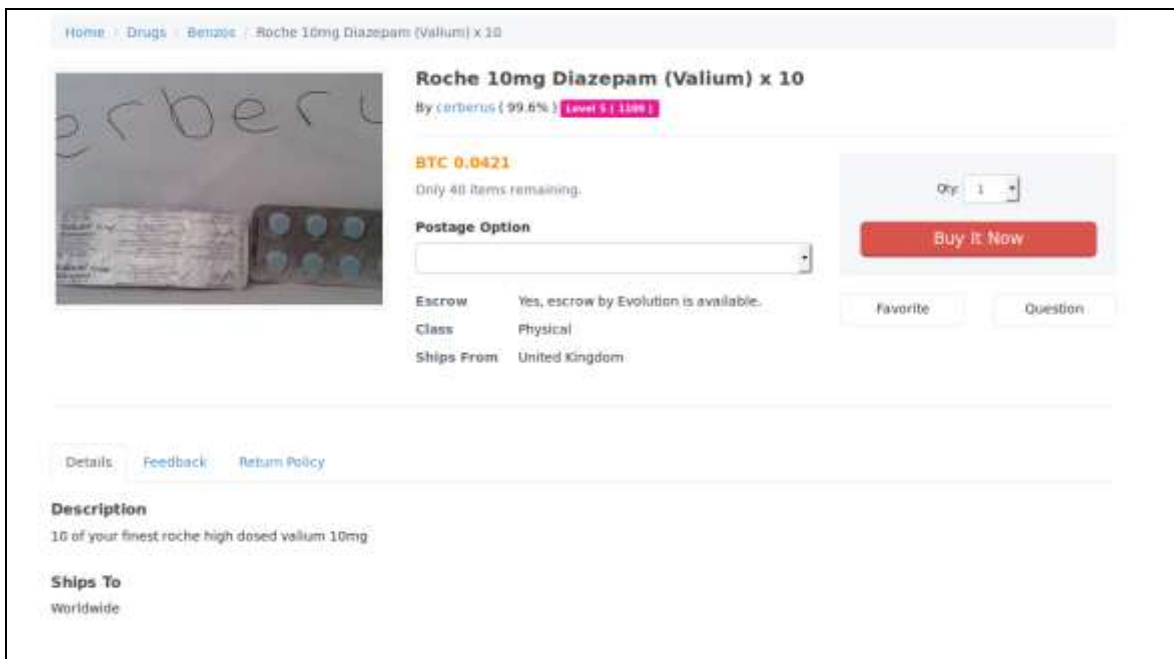


When we take a look at the different categories of medicine advertised within the “Prescription Medicine” category we see that the vast majority of adverts relate to “Stimulants” (300 adverts). The second most common adverts are for sildenafil citrate, the active ingredient in Erectile Dysfunction (ED) medication. Analgesics, or painkillers, are the third most commonly advertised prescription medicine.

### 3.2.1 Examples of illicit medicines and medical devices advertised on Evolution



Example of advertisements of Benzos on Evolution Marketplace. Please note that at the time of publication one bitcoin was valued as USD 235.



Example of Diazepam being advertised on Evolution Marketplace under the category of "Benzos" by a seller in the UK and shipped worldwide.

The screenshot shows a product listing for 'Depakin Chrono 500 mg Tablets - Sodium Valproate - Valproic Acid'. The listing includes a product image of a box, a price of 0.0065 BTC, and a 'Buy It Now' button. The seller is identified as 'FOX-15' with a 100.0% rating. The item is classified as 'Physical' and ships from Slovenia. The description mentions 'Genuine hospital tablets'.

Home / Drugs / Other / Depakin Chrono 500 mg Tablets - Sodium Valproate - Valproic Acid

**Depakin Chrono 500 mg Tablets - Sodium Valproate - Valproic Acid**  
By FOX-15 ( 100.0% ) [Level 2 \( 100 \)](#)

**BTC 0.0065**  
Only 7 items remaining.

Qty: 1

**Buy It Now**

Favorite Question

Escrow Yes, escrow by Evolution is available.  
Class Physical  
Ships From Slovenia

Details Feedback Return Policy

**Description**  
Genuine hospital tablets  
Sodium Valproate 333 mg  
Valproic Acid 145 mg

**Ships To**  
Worldwide

Example of Depakine being sold from Slovenia. The description “genuine hospital tablets” indicates that the medicine may have been diverted from a hospital. Depakine is classified as an anticonvulsant; it treats mood disorders and also helps to prevent migraine headaches.

The screenshot shows a product listing for 'Ultram Tramadol 200 mg x 100 tabs'. The listing includes a product image of a blister pack, a price of 0.1614 BTC, and a 'Buy It Now' button. The seller is identified as 'mediguns' with a 100.0% rating. The item is classified as 'Physical' and ships from India.

Home / Drugs / Ultram Tramadol 200 mg x 100 tabs

**Ultram Tramadol 200 mg x 100 tabs**  
By mediguns ( 100.0% ) [Level 1 \( 7 \)](#)

**BTC 0.1614**  
In stock.

Qty: 1

**Buy It Now**

Favorite Question

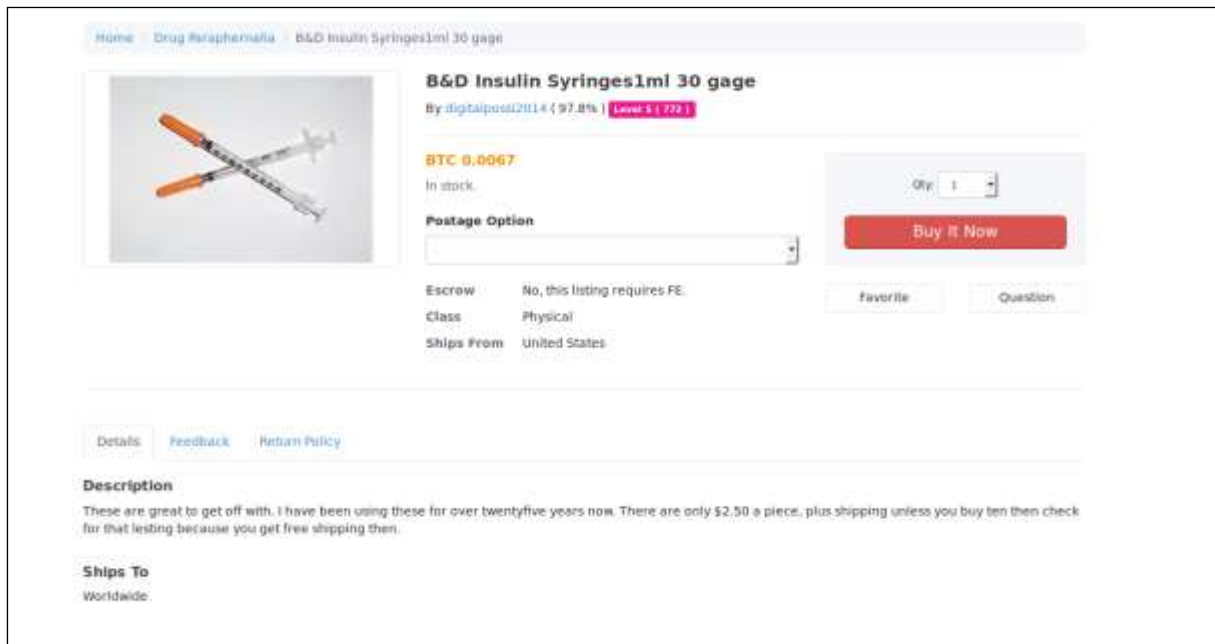
Escrow Yes, escrow by Evolution is available.  
Class Physical  
Ships From India

Details Feedback Return Policy

**Description**  
Ultram Tramadol 200 mg x 100 tabs

Example of an advertisement for Tramadol, shipped from India. During the past few years, INTERPOL’s MPCPC Sub-directorate has noted a considerable increase of Tramadol medication being shipped from India to the Middle-East and West Africa.





It is also possible to buy medical devices, such as insulin syringes, on the marketplaces. The above is an advertisement on Evolution Marketplace for syringes normally used for diabetics to inject insulin, but can also be used to inject other types of liquid substances. In the example above the syringes can be shipped from the US worldwide.

### 3.2.2 Examples of communication platforms and products for shipping and concealment

The screenshot shows the 'evolution community forums' page. At the top, there are navigation links for 'Index', 'Register', and 'Login'. Below that, there is a table of forum topics. The table has columns for 'Topics', 'Posts', and 'Last post'. The topics listed are:

Information	Topics	Posts	Last post
<b>Announcements</b> Any important news or information	08	1,000	Tuesday 11:37:03 by 20170904
<b>Helpdesk</b> Have any issues? Let us know	1,022	8,326	Tuesday 1:02:25 by 20170323
Events	Topics	Posts	Last post
<b>Monthly Rafts</b> The monthly Evolution rafts	3	305	Tuesday 12:38:42 by 20170328
News & Zone	Topics	Posts	Last post
<b>Introductions</b> Say hi to the Evolution marketplace! Say hello	1,830	8,887	Tuesday 1:4:12:02 by 20170328
<b>News Questions</b> Don't know what to ask? GET IT! GET IT! GET IT!	2,508	54,981	Tuesday 12:00:11 by 20170328
Marketplace	Topics	Posts	Last post
<b>Drugs Vendors</b> Advertisements & reviews for all drugs	2,218	97,742	Tuesday 14:19:20 by 20170328
<b>Finance Vendors</b> Advertisements & reviews for financial items	1,368	47,838	Tuesday 14:16:49 by 20170328
<b>Games Vendors</b> Advertisements & reviews for games and eBooks	887	11,880	Tuesday 12:00:02 by 20170328
<b>Other Vendors</b> Advertisements & reviews for all other items	1,793	10,281	Tuesday 12:51:56 by 20170328
<b>Interest Check</b> Access product demand for new products	3,887	21,709	Tuesday 14:03:21 by 20170328

Evolution Marketplace also hosts a forum where the most popular topics relate to drugs and payments. In these forums the users can exchange different experiences of when they came into contact with law enforcement or how to pack the products they are selling in order to avoid detection. This is a simple yet effective way to ensure that a modus operandi to ship illicit medicines can be developed and modified according to the latest countermeasures employed by law enforcement.



There are also a number of alleged professional health care practitioners who are active in the forums and provide health care advice against payment or sell illicit medicines. One of the posts in the Evolution forum comes from an alleged Spanish family doctor (username: DoctorX) who advertises his services in terms of professional advice for drug users and even provides his CV for potential customers.



To further protect the merchandise that is being shipped, this is an example of an advertisement from Evolution of a smell neutralizer that is also used against customs canine units: "It also effective against custom dogs" the advertiser writes.

The screenshot shows a product listing on the Evolution Marketplace. The breadcrumb trail is 'Home / Drug Paraphernalia / 25 pieces MMB bags 15 cm x 20cm'. The product title is '25 pieces MMB bags 15 cm x 20cm' by user 'weedybusnis' (96.6% rating, Level 3, 419 items). The price is listed as 'BTC 0.0333'. The item is 'In stock'. There is a 'Postage Option' dropdown menu. A 'Buy It Now' button is present, along with 'Favorite' and 'Question' buttons. The listing includes an image of several white plastic bags. Below the main listing, there are tabs for 'Details', 'Feedback', and 'Return Policy'. The 'Description' section states: '25 pieces MMB bags', 'MBB 15 cm x 20cm 100 flat foil pouches', 'These are top quality', and 'Easily sealable with Hair Straighteners'. The 'Ships To' section indicates 'Worldwide'.

Pharmaceuticals that are being shipped are usually packed in these small plastic bags that can be sealed with hair straighteners to avoid customs canine units from picking up a scent. Above is an example of these plastic bags being sold on Evolution and shipped from the Netherlands worldwide.

The screenshot shows a product listing on the Evolution Marketplace. The breadcrumb trail is 'Home / Drugs / Other / Empty capsules 100pcs size 4 Great to pack powdered drugs;'. The product title is 'Empty capsules 100pcs size 4 Great to pack powdered drugs;)' by user 'sweshroom' (100.0% rating, Level 2, 104 items). The price is listed as 'BTC 0.0152'. There are 'Only 49 items remaining'. There is a 'Postage Option' dropdown menu. A 'Buy It Now' button is present, along with 'Favorite' and 'Question' buttons. The listing includes an image of a bag of capsules with the brand name 'Sweshroom' visible. Below the main listing, there are tabs for 'Details', 'Feedback', and 'Return Policy'. The 'Description' section states: 'Empty capsules 100pcs size 4', 'Great to pack powdered drugs;'. The 'Ships To' section indicates 'Worldwide'.

Example of an advertisement with empty capsules for the transportation of powdered drugs on Evolution Marketplace. Just like with the smell neutralizer and the plastic bags, the empty capsules is a way for the sender to conceal the shipment of illicit pharmaceuticals and avoid detection by law enforcement authorities.

## 4 CONCLUSION

The results presented in this report suggest that one of the most commonly advertised products on Silk Road 2.0 and Evolution are prescription medicines. Before Silk Road 2.0 was shut down, 30 per cent of the total amount of advertised drugs were prescription medicines – compared to the second most advertised, cannabis, at 17 per cent. Within the section of prescription medicines, the most commonly advertised therapeutic category on Silk Road 2.0 was “Relaxants”, which mainly refers to benzodiazepine (e.g. used to treat anxiety, panic, insomnia and alcohol dependence). On Evolution, 9 per cent of the total amount of advertised drugs can be classified as prescription medicines. However, if we also include the categories of “Stimulants” and “Benzos”, which often contain prescription medicine, the percentage could be as high as 32 per cent. On Evolution, cannabis is the largest drug advertised (26 per cent). Other commonly advertised medicines among the prescription category on Evolution are different types of “Ecstasy” and “Stimulants”, commonly referred to as “uppers”, which temporarily increase alertness and energy.

It is noteworthy that the type of prescription medicines advertised on Silk Road 2.0 and Evolution are not completely aligned with the results from the previous year’s Operation Pangea, a global INTERPOL operation which aims at disrupting the illicit online trade of pharmaceuticals on the surface web. Although ED medication was advertised on Silk Road 2.0 and is advertised on Evolution, it is not at all as prominent as in the seizure statistics from Operation Pangea. Year after year, the most commonly seized product during Operation Pangea is ED medication. By contrast, on Silk Road 2.0, the vast amount (78 per cent) of drug advertisements were “Relaxants” and “Analgesics”, while only 10 per cent are adverts for Sildenafil Citrate (ED medication). A very similar result is found on Evolution where 71 per cent of drug adverts relate to “Stimulants”, “Relaxants” and “Other” types of medication, with only 15 per cent devoted to ED medication. It is also interesting to note the low percentage of slimming pills on Silk Road 2.0 and Evolution, which is prominent among the seizures in Operation Pangea. Since slimming pills are mostly consumed by women, this is an indication that most Silk Road 2.0 users may be male.

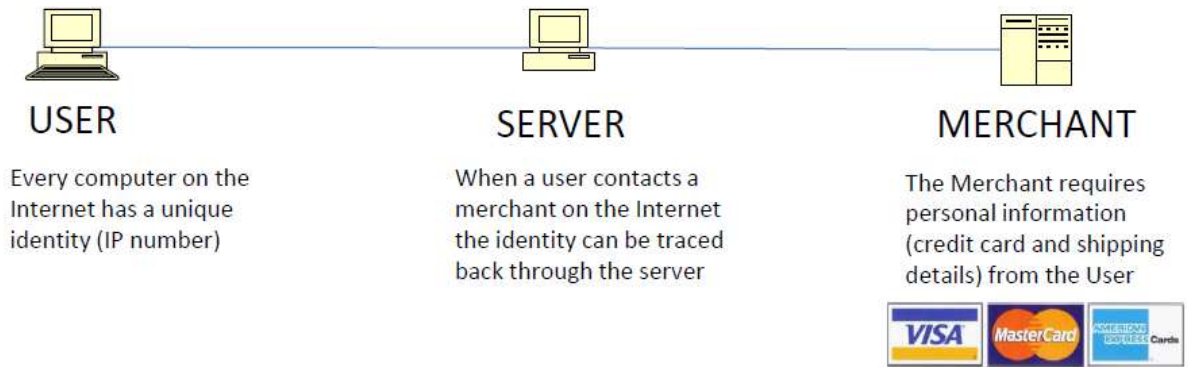
Similar to the problem with illicit online pharmacies on the surface web, the advertisements on these Darknet marketplaces for prescription drugs can potentially be selling falsified medicine. Since many, if not most, of the advertisements on the two investigated marketplaces offer shipping world-wide, this is truly a public health problem on a global scale. Although several of these adverts claim to be shipping from Europe, North America and Australia, we know from the *modus operandi* used by the illicit online pharmacies on the surface web that the products are oftentimes falsified, diverted or stolen in other regions of the world and then transported to a European or North American destination to appear authentic. However, there is currently not enough evidence to conclude with certainty that the Silk Road 2.0 and Evolution adverts are using the same type of “drop shipping” as the illicit online pharmacies on the surface web.

In conclusion, the issue of pharmaceutical crime on Darknet market places, poses a great challenge to law enforcement and a severe risk to public health on a global scale. Currently, these market places are not utilised on a grand scale, mainly due to the fact that TOR makes it much slower than the surface web. In order for law enforcement to stay ahead of the curb and effectively mitigate the threat posed by criminals operating on the Darknet, INTERPOL IGCI offers capacity development support for member countries that want to create or further develop cybercrime units with specialized training on analyzing darknet infrastructure. In parallel, INTERPOL’s specialised crime units, such as MPCPC, will continue to give member countries tailored support for particular crime areas. In the case of pharmaceutical crime, international and interagency cooperation are essential to combat this global problem and protect public health.

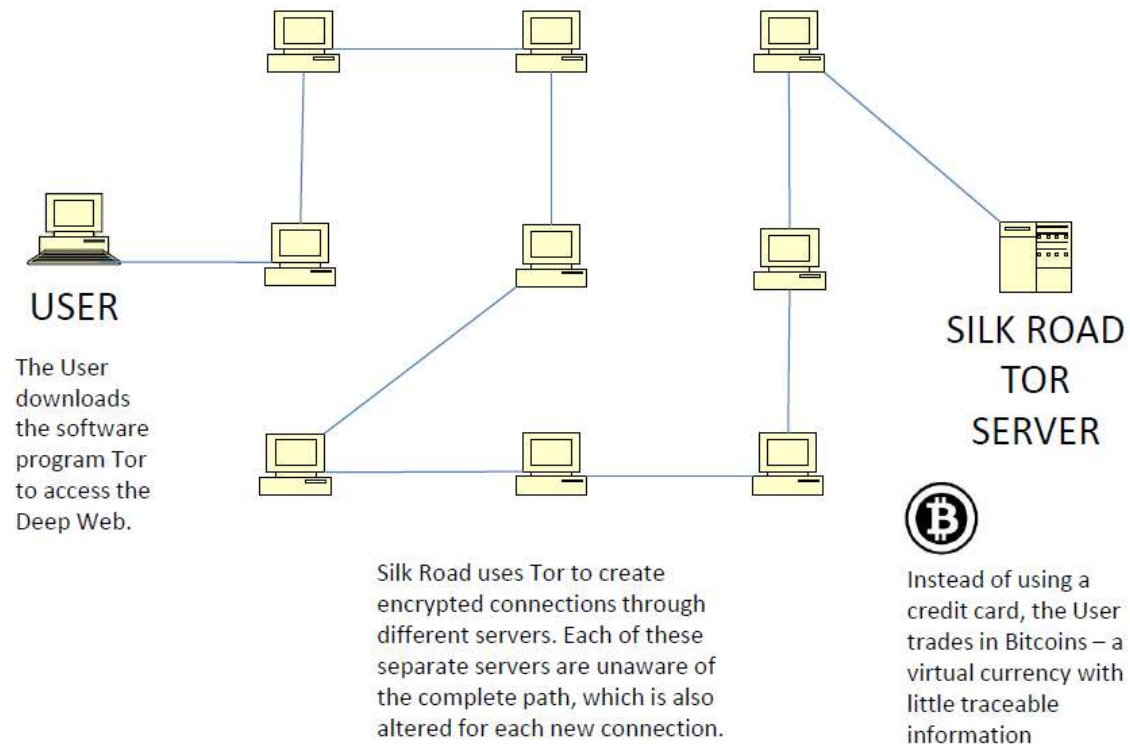


## APPENDIX I

### SURFACE WEB



### DARKNET







## Report Evaluation Form

Report title:	Pharmaceutical Crime on the Darknet
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About you! Are you:

<input type="checkbox"/> requesting INTERPOL Sub-directorate
<input type="checkbox"/> requesting member country <input type="checkbox"/> NCB <input type="checkbox"/> specialized unit
<input type="checkbox"/> member country as recipient of the report <input type="checkbox"/> NCB <input type="checkbox"/> specialized unit
<input type="checkbox"/> international organization
<input type="checkbox"/> private entity

Evaluation:

1. Was this report useful to you? Please comment.						
2. How would you rate the following:						
	Very poor			Excellent		
	1	2	3	4	5	6
The overall content of the report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The quality of the report – drafting, format and layout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Please evaluate the following:						
Level of detail	<input type="checkbox"/> too simple	<input type="checkbox"/> appropriate	<input type="checkbox"/> too complex			
Amount of information	<input type="checkbox"/> too little	<input type="checkbox"/> appropriate	<input type="checkbox"/> too much			
Language	<input type="checkbox"/> too simple	<input type="checkbox"/> appropriate	<input type="checkbox"/> too complex			
4. Have you taken any actions as a result of this report? If yes, which one?						
5. What do you think we could improve for such assessments? Other comments?						

THANK YOU FOR YOUR TIME!

Please fill-in the form, scan and send it back to [sc-cas@gs.igcs.int](mailto:sc-cas@gs.igcs.int) or [sc-cas@interpol.int](mailto:sc-cas@interpol.int)!

INTERPOL Criminal Analysis Sub-directorate

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INTERPOL is the world's largest international police organization. Our role is to assist law enforcement agencies in our 190 member countries to combat all forms of transnational crime. We work to help police across the world meet the growing challenges of crime in the 21st century by providing a high-tech infrastructure of technical and operational support. Our services include targeted training, expert investigative support, specialized databases and secure police communications channels.

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Our vision is that of a world where each and every law enforcement professional will be able through INTERPOL to securely communicate, share and access vital police information whenever and wherever needed, ensuring the safety of the world's citizens. We constantly provide and promote innovative and cutting-edge solutions to global challenges in policing and security.



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