



EXPERT MEETING - INTERNET AND DRUGS

DIRECTORATE-GENERAL MIGRATION AND HOME AFFAIRS

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EXPERT MEETING ON INTERNET AND DRUGS *Background paper*

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1. INTRODUCTION

Various research findings and other resources point out that in recent years the sales of illicit drugs via internet has increased substantially (Mounteney, Oteo and Griffiths, 2016; EMCDDA, 2015). In line with Action 22 of the EU Drugs Action Plan (Identify strategic responses to address the role of new communication technologies and the hosting of associated websites, in the production, marketing, purchasing and distribution of illicit drugs, including controlled new psychoactive substances) the European Union is investing in getting grip on the internet drug markets.

In order to better understand the problem and assess possible actions, the European Commission's Directorate-General for Migration and Home Affairs is preparing, in the framework of the EU Internet Forum, an expert meeting with the aim to:

- > Look closer at the problem and agree a common definition
- > Look closer at what is happening in the EU Member States and other regions of the globe when it comes to drug trafficking online
- > Explore possible ways of common action in the future in the EU and in cooperation with international partners.

The meeting aims to bring together experts from various fields of work such as law enforcement officials, healthcare workers, researchers as well as representatives of industry and civil society. The key theme of the expert meeting will be exploring the changes of the drug markets through the use of internet and bringing together existing knowledge and expertise. Trends and developments will be discussed, as well as existing and expected implications for policy and practice. Finally, the meeting will identify best practice examples of demand and supply reduction when it comes to this relatively new phenomenon of purchasing and selling drugs through the internet.

The primary focus will be on the illegal drug markets. It will however include the 'grey zone' between the internet markets for legal and illegal drugs, in particular the NPS market, as the legal status of a number of these New Psychoactive Substances differ between EU Member States, and also illicit sales of prescription medicines. While primarily focusing on the use of Tor hidden services (Tor is an acronym for 'The Onion Router'; see further in chapter 2 under dark net), the so-called dark net markets or cryptomarkets, relevant parts of the surface, freely accessible web will also be covered where appropriate, as many drugs, especially NPS are being marketed through the surface web via a variety of trade sites. Online pharmacies and social media and apps are also players on the surface web of interest here. The expert meeting is expected to discuss recommendations for future action.

2. PROBLEM DEFINITION

Research findings and other publications point out that in recent years the marketing and sale of drugs via internet has increased substantially. This is true for licit and illicit drugs but also for pharmaceutical drugs. It is just about one decade ago that the first exploratory studies (of the then completely new phenomenon) were published, soon followed by more detailed studies. A comprehensive overview of the phenomenon can be found in the report 'The internet and drug markets', recently published by the EMCDDA (Mounteney, Oteo and Griffiths, 2016). This report contains a collection of articles describing the most relevant aspects of drugs and the internet and forms the main source of this report.

The available research underlines that the number and variety of websites or web shops operational all over the world has increased substantially. They show that any drug can be purchased on the internet, from 'classic' illicit drugs like cocaine, amphetamine type stimulants and ecstasy to so-called New Psychoactive Substances (NPS) and psychopharmaceuticals.

Drugs became increasingly easy accessible through various websites. There are two distinct main sources to purchase drugs on internet. One is the so-called dark net or dark web, which with its cryptomarkets has drawn much attention in the past decade, with Silk Road as best known and most researched exemplar. Drug trade on the dark net can be traced back to 2009. Silk Road took off in 2011.

The other is the common freely accessible (or clear) surface web, which can be accessed through search engines like Google, Bing or Yahoo. Many web shops can be found on the surface web, marketing mainly non-controlled substances or substances for which legal controls differ between countries and jurisdictions. The first internet drug transactions date back to as early as 1971, a then rather isolated phenomenon. In the mid-90s online vending of drugs began to take shape. A still rather small selection of psychoactive substances became available as 'research chemicals'. So-called psychonauts, individuals interested in exploring effects of psychoactive substances, were the purchasers. Since then the online market for NPS has been rapidly expanding.

Besides websites selling NPS and sometimes also precursor chemicals, online pharmacies are a common phenomenon supplying everything from lifestyle products to performance enhancement products and to prescription drugs. Alongside these markets, social media play a role with their forums and mobile applications where drugs are discussed, advertised and sometimes sold.

2.1. The dark net

The dark net is a part of the deep web, which cannot be accessed by general search engines. The deep web can only be searched within the boundaries of a specific website, for instance a library. The dark net is a hidden section of the deep web inaccessible for standard web browsers. Special software is required to access the cryptomarkets, such as a Tor client or Tor Browser. Most cryptomarkets run as a Tor hidden service. A Tor browser is free browsing software that ensures online anonymity and protects the personal privacy of the internet user. The Tor technology allows for the creation of a meeting point inside the Tor network, facilitating communication between client and server while maintaining their IP addresses unknown from observers and from each other. Tor has made it relatively easy for anybody to browse the internet anonymously (Cristin, 2012).

Another feature contributing to the secrecy of the operations of cryptomarkets is the use of virtual currencies or cryptocurrencies like bitcoins. Financial transactions with bitcoins are far more difficult to trace than payments with credit cards, but are not fully anonymous. They have to be exchanged against regular currencies, i.e. bought and sold through an internet banking system, which works in very much the same way as ordinary internet banking. Moreover there is a central registry (ledger) recording all transactions made in one cryptocurrency (among other things, to prevent spending the same coins twice) (Cristin, 2012).

Cryptomarkets are online marketplaces acting like a broker between vendors and purchasers. Frequently a mix of licit and illicit goods can be purchased, among which a variety of drugs. Their design is generally very similar to popular legal market places on the surface web, like eBay, allowing customers to look for and compare products and sellers. Cryptomarkets also include features like rating the products and the sellers, feedback and reviews, allowing customers to assess the quality of vendors. This customers' feedback works as a kind of 'quality control' and contributes to creating trust among the customers in a virtual, anonymous market place (Aldridge and Decary-Hetu, 2014 and 2016).

Another system to protect buyers is the use of an escrow system, a financial instrument held by a third party on behalf of the seller and the buyer. The buyer pays for the purchase in bitcoins, but this payment is held by the escrow service until it receives confirmation that the buyer has received the purchase in good order.

One factor contributing to the well functioning of cryptomarkets is that they employ self-regulation. In case buyers or sellers do not comply with the rules of a cryptomarket sanctions are applied like withdrawal of a user account.

Cryptomarkets also offer the possibility for vendors to sell to unknown buyers, thus opening the market, moving away from the closed markets between a vendor and a regular customer, as got common in markets based on mobile phone transactions. They offer the possibility of a direct link between buyer and producer/seller, cutting out the middle level.

This anonymity of cryptomarkets, serving as stage for transactions and exchanges without face-to-face contact, is seen by some as helping to reduce violence, extortion and robbery associated with traditional drug markets (Aldridge and Decary-Hetu, 2014; Soska and Christin, 2015). Another interesting issue mentioned in the literature is the relatively good quality of the products sold on dark net markets (in terms of purity) compared with drugs sold on the street (Mounteney, Oteo and Griffiths, 2016; Van der Gouwe, et al., forthcoming 2016).

However, despite of all these advantages, cryptomarkets have their downsides too. They might be (relatively) anonymous but they have some weak spots. Anonymous transactions also mean that the possibilities are limited or even zero to get redress in cases of cheat or theft, in a way comparable with transactions with an unknown street dealer.

Another weak spot is of course the delivery, generally done through an ordinary postal system, which makes cryptomarkets vulnerable. In particular cross-border shipment involves risks for the seller and the buyer.

The financial infrastructure based on the use of bitcoins also contributes to the vulnerability of cryptomarkets. The registration of bitcoin transactions opens the possibility of traffic analysis. The history of all transactions is in fact publicly available and can be used for a network analysis, mapping sets of public keys to individual users and transactions. There are reports of scams by marketplace administrators and hacks from outside. Law enforcement efforts also resulted in closures of markets. However, their contribution to closure of cryptomarkets seems to be rather small. "Independent researcher Gwern Branwen, who has been systematically documenting and archiving these markets, found that 43 new markets opened in 2014 and 46 markets closed. Most of these closures, he estimates, were due to scams by marketplace administrators (or outside hacks), with only six closures attributable to law enforcement." (Aldridge and Decary-Hetu, 2016) Cryptomarkets prove to be increasingly susceptible to the gradually sophisticated control measures. For this reason, investments in security measures to combat outside intervention have gone up (Van Buskirk et al., 2014).

There are also reports of abuse of the rating systems by market operators creating buyer accounts and producing positive ratings and reviews on fake transactions building up a good reputation first and then abusing the trust of and ripping off customers.

All these factors foster mistrust and might have contributed to the, overall, still relatively small market share of cryptomarkets in the global drug trade. Scams and, to a lesser extent, law enforcement activities, are seen as the reason that cryptomarkets tend to be rather short-lived.

Experts refer to additional factors that may impose limitations on the growth of these markets. Access to them requires a degree of technological knowledge; for example, a buyer needs to understand how to use Tor software and how to purchase and use a cryptocurrency. Furthermore, cryptomarket drug purchases are only for those who plan their use in advance. They are not for people who spontaneously feel the desire to use a drug e.g. while enjoying nightlife. Moreover, some people might simply prefer to stick to their familiar dealer.

Nevertheless, the market share of drug cryptomarkets seems to increase. They have substantial advantages for both buyers and sellers and they mean a significant change of the drug markets.

2.2. The surface web

a) NPS

Since the early 2000s selling and buying of NPS through the internet has become increasingly popular. In a snapshot exercise in 2013, EMCDDA identified 651 websites selling NPS in the EU (EMCDDA 2015). The NPS markets on the surface web became a rather common and well-studied phenomenon.

Drugs on the surface web shops are generally well accessible through common search engines like Google, Bing or Yahoo. Ticking the name of the drug one is looking for is generally enough. One can also visit sites and then look what they have in store; one can compare sites and vendors, comparable to the way it can be done with many other legal commodities sold by web shops. This is also true for NPS, which might be illicit in the country of the buyer but licit in another EU Member State.

There are shops selling NPS as 'research chemicals', mostly under their chemical names, and more commercial shops, where products are sold under brand names, like for instance Flava or Flux for 4-FA= 4-FMP/4-fluoroamphetamine, meow meow or m-Cat for 4-MMC (Mephedrone), Benzo fury for 6-APB or MXE and mexxy for Methoxetamine. In recent years the NPS online market changed from a rather open, fully visible and easily accessible market to a more diverse phenomenon. There are still web shops trying to maximise their visibility by advertising and also by manipulating their position on search engine results through so-called spamdexing. However, there are also web shops choosing a more anonymous status and focusing on specific target groups or regular, registered customers. The latter can be done by accepting only invitees, individuals introduced by already accepted customers. There are different ways to cover web shop activities, e.g. by not using drug-related keywords or by using codenames or by presenting them as chemicals used for other purposes, e.g. laboratory work. Finally, there are also mixed or grey markets, consisting of both openly accessible surface web segments and concealed elements on the deep web. Martinez, Kmetonyová and Bělácková mention for instance websites, which advertise NPS sales on their front page but allow access to actually buy (certain) substances only to individuals who have been introduced by already accepted customers (2016).

b) Online pharmacies

Another segment of the surface web of certain interest when looking at the drug markets on internet are online pharmacies. These started to become popular in the early 2000s. They sell a wide variety of medicinal commodities, including lifestyle and performance enhancement products but also medicines, covering both over the counter and prescription-only medication. There are fully licit online pharmacies, operating according the national and international legal provisions and professional standards (regarding quality of the medicines sold), and illicit online pharmacies selling among other things prescription only medications without prescription and imitation medicines. The legal regulations regarding online vending of medicines in EU Member States differ substantially. Only advertising for prescription-only medication is forbidden in all Member States. As of 1 July 2015 there is a common EU logo to identify legitimate online retailers of medicine. The use of the logo allows consumers to differentiate between legitimate online pharmacies (and other medicines retailers) from illegal ones, the latter being the main source of prescription-only medicines (including opioids) sold without a prescription and of falsified prescription-only medicines (including opioids).

Though the rather scarce available data give the impression that online pharmacies play still a modest role in medicine, and more specifically the drug markets, there are some concerns about the illicit supply of psychopharmaceuticals like benzodiazepines but also prescription opioids and stimulants through online outlets (Scammel and Bo, 2016).

c) Social media and apps

Social media, internet forums, video sharing sites like YouTube and apps also play a consequential role on the internet drug markets. They can be used to facilitate supply, through directly advertising drug web shops and also through just informing where (and how) to buy but also how to reduce supply or drug use related health harm. Though social media is a surface web phenomenon, Facebook, for example, has recently allowed access to its services through Tor.

There are some studies looking into the influence of information about drugs and drug use presented on social network sites on the behaviour and social norms of young people participating in these networks. Different studies looked into the potential of these sites to change the perception and norms of young people regarding the use of drugs and to increase the demand. However, this research does not result in clear-cut conclusions regarding the impact of the sometimes rather positive information presented on these sites (Thanki and Frederick, 2016).

There are also quite some drug user forums where individuals exchange their experiences with using drugs. These forums can provide useful information to users about pleasant and unpleasant effects of substances. They can also be a valuable source for monitoring the emergence of new substances and trends in drug use and for developing harm reduction responses (see below).

On video and picture sharing sites drug and drug use related contents can also be found. There is some research on YouTube, the most widely used video sharing site. The drug related contents cover a wide spectrum of messages, as can be taken from the classification Manning produced for his content analysis of YouTube videos: docs, celebratory, news, cautionary, consumer do it yourself, traditional drugs education, reflective, other, new drugs education, legal high ads and satirical. The order reflects the frequency ranking (Manning, 2013). This classification shows the diversity of purposes a medium like YouTube is used for. Publicity for a substance on YouTube can also have a double or contradictory effect, it can fuel demand and it can, at the same time, alarm policy makers resulting in supply reduction attempts (Thanki and Frederick, 2016).

The increasing number of apps on drug use issues shows that this medium can also be used for advertising, stimulating the use of certain drugs; as well as for health information and harm reduction purposes.

2.3. Challenges for research and monitoring

While the surface web is relatively easy to search and to monitor with available technology, monitoring the dark net is much more difficult. In recent years some instruments have been developed in some Member States, which look promising (see 3.1). Still, there are no commonly used investigation tools and protocols.

Another challenge is the difference in status of some NPS in different EU Member States. A substance, which has not yet been scheduled at EU or UN level, could be licit in some Member States and illicit in others, and it might be available through both the surface web and through the dark net. So monitoring the trade in that substance might require quite some efforts, covering both the surface web and the dark net, reflecting the possibility that the substance is sold through the surface web hosted in one country where it is licit to buyers in other countries where it is illicit.

Available findings also show that there are major differences between EU Member States regarding availability and use of specific NPS. For instance, the NPS 4-fluoro-amphetamine (4-FA/4-FMP) is gaining significant popularity in the Netherlands; or pentadone by means of injecting in Hungary, whereas this does not seem to be the case anywhere else in the EU at the same level.

2.4. Challenges for demand reduction

It is yet unclear if and how the emergence of the internet drug markets influences the demand side of the market and what the implications are for demand reduction (including harm reduction). The available research is still limited and the market share of websites selling drugs small.

In the literature one can find references to for example improved access to a wide variety of drugs, to changes in substances used, uncertain health consequences of new substances (toxicity, acute and long-term effects, etc.) and better quality (in terms of chemical purity) compared with drugs purchased on the street (Van der Gouwe, et al., forthcoming 2016). There is also mention of the possibilities to use internet and drug market websites as a source of demand reduction information (prevention and awareness raising). In particular the potential for communicating harm reduction messages is brought up in different publications. Users are also referring to the usefulness of drug forums and social media to learn about safer use of substances. Shared negative experiences with the use of certain substances and warnings (e.g. not to combine the use of particular substances) can contribute to reducing harm and even demand. Yet, there are also concerns that the information shared on forums could promote experimentation or use of substances and lead to an increased diversity of drugs used (Thanki and Frederick, 2016).

Not much is known yet about the buyers on the internet drug markets. There is some research on some characteristics and on specific groups, e.g. research on the profiles of Silk Road customers (Mounteney, Oteo and Griffiths, 2016). One general assumption is that people buying on internet drug markets, in particular on dark net markets, use drugs in a planned way (Aldridge and Decary-Hetu, 2016). So, there are still various questions to be answered regarding the buyers on the internet drug markets. The answers are of interest both for demand reduction services and for police and justice. Do users move to online markets or do they simply use it alongside street-level markets? Did users who are now buying drugs on cryptomarkets (or other internet drug markets) previously buy drugs on the traditional drug market, or did they start buying drugs via internet, and if so, why? What are the differences in the profile of buyers from the different drug markets? For setting priorities in supply (and demand) reduction it is also relevant to know if there are differences between buyers from online markets and buyers from traditional markets with regards to problem drug use.

2.5. Challenges for supply reduction, the drug control system

According to some experts, the emergence of the cryptomarkets did not introduce substantial changes in the criminal business chain from production, wholesale, transport, distributive trade and retail trade. In particular the production end of this chain seems to have remained rather unaffected by the emergence of the cryptomarkets. The transport of drugs on the wholesale level also seems to be rather unchanged. Cross-border drug shipments of parcels are reported to have increased substantially, which is seen as a result of the growing importance of cryptomarkets. Buying bigger amounts of drugs through cryptomarkets for further retail also became more prominent, meaning that dark net markets might, in some cases, result in cutting out the middle level and in other cases in fact function as distributive trade. On retail level, cryptomarkets seem to be the most significant change, despite their still rather small market share. The buyer orders the drugs anonymously on a dark net marketplace and pays with bitcoins. The retailer sends off the illicit drugs ordered through an ordinary postal service. We already mentioned that this anonymity might help reducing violence, extortion and robbery associated with traditional drug markets (Van Slobbe, 2016).

An extra challenge of the online drug markets is that they can operate internationally, they are not geographically bound and the actual marketplace (i.e. the servers where the transactions take place) can be easily moved from one place to another, where other (national) control policies apply. The latter is especially interesting for selling substances, which are licit in one country but illicit in another. The internet as a drug market place has the potential to contribute to the ongoing process of globalisation of the (illicit) drug market. The internet facilitates illicit drug trade evading the traditional drug control and intelligence measures. The current legal provisions and available drug control measures need to be reconsidered to meet the requirements of these drug market changes.

A complicating factor for supply reduction measures is the mixing of trading legal and illegal goods in one marketplace. Furthermore, investigations show that like the conventional illicit drug markets the illicit drug markets on the internet also prove to have links with other criminal activities like selling of arms, money laundering, etc.

Other important questions for police and justice are linked to whether the emergence of cryptomarkets leads to changes of the players on drug markets. Do users and/or vendors move from offline to online markets and vice versa? Do street dealers expand their territories to online markets? Are online vendors newcomers on the drug markets? Are there vendors operating both online and on the street? There are police investigations showing that there is no strict distinction between players on the cryptomarkets and drugs dealers in the 'regular' drug trade. Are NPS, 'traditionally' marketed online, also entering the street-level markets? What are the motives behind all these changes?

Finally, there is of course the issue of the effects of supply reduction measures. Generally it is acknowledged that the effect is rather modest. Closing down a website commonly does not have a lasting effect/impact. New shops are replacing the closed ones. Though these might be frequently rather short-lived the impact on availability seems to be limited. Another effect is that newly emerging cryptomarkets tend to be better protected against detection. New sites introduced new requirements, which new customers have to fulfil before getting access to a site, e.g. being introduced by someone the administrator already knows. There are also checks of the history of candidate vendors on the dark net.

Another interesting strategy which is emerging is decentralizing the cryptomarket. While the traditional cryptomarket model is running all transactions on one single server/computer, a decentralized market model involves all computers participating in that market. OpenBazaar, the best-known example, is software that needs to be installed on a computer to participate in the market (<https://openbazaar.org/> Accessed 26 April 2016). *"Therefore, when someone runs the OpenBazaar software on their computer, it immediately becomes part of the marketplace itself. This creates the potential for a fully distributed marketplace spread across millions of computers around the globe. Each computer handles only a part of the marketplace, rather than everything being handled on one single computer. Tor hidden services or I2P eepsites could be used with this model to further protect the identity and privacy of users involved in the marketplace."* Lewman, A. (2016)

3. CURRENT RESPONSES – AN OVERVIEW

The development of internet marketplaces and web shops where licit and illicit drugs are sold and purchased poses serious challenges for drug policy. Both demand and supply reduction are in need of finding ways to respond effectively to the changing situation. In the past years important steps have been taken, from small ad hoc activities to major projects and new elements of institutionalised efforts.

This background paper differentiates the current responses under three headings: monitoring and research activities, demand and harm reduction responses and supply reduction responses. It presents a typology of responses (providing references to relevant practices) rather than a detailed description of the various responses developed in EU Member States and some selected third countries. It does not pretend completeness. The starting point was screening available literature. Especially helpful has been EMCDDA's report 'The internet and drug markets' (Mounteney, Oteo and Griffiths, 2016). It provides a good overview of research undertaken and major responses implemented. Though quite some attention has been paid to the phenomenon of internet drug markets, the available literature shows that responses are still quite scarce. The picture of a field where responses are still in their infancy is confirmed by a progress review of the implementation of the EU Drugs Strategy and Action Plan 2013-2014 carried out in 2015 and a consultation of some key experts, amongst others from National Focal Points.

Overall, it is also too early to talk about best practices yet. There are no studies establishing the effectiveness of the currently developed supply and demand reduction responses. This is even true for the demand reduction responses targeting the surface web. So, strictly speaking, there are no evidence-based, proven effective approaches, that could be translated into best practices and widely implemented, not even in the field of drug prevention and harm reduction, the two main areas of demand reduction responses targeting the internet drug markets. However, the number of activities, projects and programmes is clearly growing.

3.1. Research and monitoring activities

The first step has been exploring the phenomenon, which has been completely new around 2000, as a prerequisite for developing appropriate, effective responses. The first publications on monitoring the surface web saw the light nearly fifteen years ago. Psychonaut 2002 is the first project using a methodological approach, the so-called snapshot method, to identify and analyse websites with drug-related content, some of them offering drugs. Like time point observations, monitoring behaviour for a certain period of time at predefined intervals, the snapshot method takes a picture of what is happening on a website at a certain point of time, an approach allowing to monitor the (rapid) changes over time (Schifano et al., 2006).

Various tools and approaches have been developed and implemented since then. Some in the form of projects, as for instance the EU-financed I-TREND project. New software tools were developed and tested to systematically monitor NPS related forums, using a partly automatized, periodical monitoring approach consisting of two software tools. One was the 'Shop-Finder', identifying relevant websites, running a snapshot, categorising the search outcomes (identifying the most popular web shops) and regularly feeding the selected information about shops into an online database. Over 10 forums per country (five EU Member States were involved in the project: Czech Republic, France, the Netherlands, Poland and UK) were monthly monitored for more than 2 years, thereby adding new and unique data to already existing monitoring tools. Further to that, Google-indexed web shops where NPS are marketed were followed over a longer period of time by testing a specially developed tool to crawl these vending sites on issues as substances marketed, criteria for buying NPS etc. (Martinez, Kmetonyová and Bělácková, 2016).

There is also interesting research using so-called data mining techniques to explore and analyse drug-related content on social media. The underlying idea is that processing and systematically analysing large numbers of social media data can provide additional information on drug use and markets. Yakushev and Mityagin (2014) found that, through data mining, the level of interest in drugs among the users of these media could be determined. In addition, the authors were able to obtain information on the interests of individuals who had posted drug-related content. They suggest that social media can provide a better picture of those with 'light' addiction problems than traditional sources of data on drug use.

The dark net is more difficult to explore and monitor. The first publications exploring the dark net markets came out less than ten years ago. 'Travelling the Silk Road' was one of the earliest research papers helping to understand how a cryptomarket is working and providing detailed information of the Tor service and the use of Bitcoins. Based on nearly 6 months systematic monitoring it also provides a good picture of the type of goods being sold on Silk Road (showing that it has been mainly a market for controlled substances and narcotics) and of the revenues made both by sellers and Silk Road operators (Cristin, 2012).

The Netherlands Organisation for Applied Scientific Research (TNO) has developed a tool, which allows monitoring the dark net, the so-called Dark Web Solutions Programme. Comparable with the I-TREND approach this tool consists of two elements: one which facilitates identifying sites selling drugs and one which allows crawling the identified sites to get a picture of the drugs offered. TNO is at the moment working on an improved version of this tool (TNO, 2015).

In some EU Member States already existing, regular efforts to monitor the drug markets have been extended to cover elements of the internet drug markets. This sometimes is done by including additional elements in regular surveys. In Spain, for instance, questions on buying substances on internet have been included in EDADES (GPS-HOUSEHOLD 15-64), ESTUDES (STUDENTS SURVEY 14 to 18 years) and also in the national Early Warning System. In the Hungarian annual survey of the National Focal Point checking the street prices of illicit drugs, clients of outpatient drug treatment centres purchasing drugs and/or NPS are asked where they had obtained these substances. This also gives a picture of the online availability of substances and of the 'popularity' of purchasing drugs, including NPS, online. In UK the Crime Survey for England and Wales (the main GPS source for drug prevalence) also includes monitoring the use of the internet to buy drugs.

Another example is the Drug Information and Monitoring System (DIMS) at the Trimbos Institute in the Netherlands. DIMS monitors the markets in illicit drugs used in recreational settings. Testing of consumer samples helps to identify new drugs available and emerging trends on the Dutch drug markets. DIMS experiments with broadening its scope by monitoring dark net marketplaces, though not yet as a regular, structured exercise. DIMS is also working on a systematical comparison of samples bought offline and online regarding purity and price (Van der Gouwe et al., forthcoming 2016).

Some institutionalised monitoring efforts also started to include monitoring user forums, which can provide valuable information about new drugs, emerging trends (certain drugs gaining or losing popularity among groups of users) and also changing use patterns. Information shared by users on these forums can also contain information about negative (side) effects of the use of particular substances, which can be helpful for harm reduction and prevention responses (see above under social media and apps). There is no conclusive evidence about the direct impact of this information on drug users behaviour nor about the impact of harm reduction and prevention messages and measures using this information. However, identifying emerging trends in drug use and markets is definitely useful to inform policy and practice (Thanki and Frederick, 2016).

In several EU Member States explorative activities and research can be found to investigate the internet net drug markets, both the surface web and the dark net. These activities include simply exploring the possibilities of using a Tor Browser to access cryptomarkets and taking a look at what one can get there, to more systematic explorations of the available markets and substances. In various Members States 'snapshots' have been taken of the internet web shops selling drugs, in some cases as part of an EMCDDA pilot and in other cases also as independent national activity.

One example of a more systematic research approach is the Austrian VIDRO Virtual Drug Trafficking study, examining to what extent the physical drug markets have been replaced by virtual marketplaces and how far the actors and structures of organised crime operating on internet drug-markets are the same as those operating on face-to-face offline markets. The project is also expected to result in the development of a novel tool that allows for a systematic analysis of virtual drug trafficking and cryptomarkets.

In Portugal several quantitative and qualitative studies have been carried out on the role Internet plays as drug marketplace and as source of information about illicit drugs and NPS. These studies show among other things the importance of internet as source of information about substances appearing on internet drugs markets, but also on their psychoactive effects and on harm reduction strategies.

Finally, the Pompidou Group (PG) of the Council of Europe also monitors the phenomenon on a regular basis and publishes monthly reports and semi-annual reviews for its members.

3.2. Demand reduction responses

Besides drug demand reduction information on online drug marketplaces and on drug use related content on social media, there are drug information websites and e-health applications available on the internet, designed for demand reduction purposes.

To start with the latter, drug information websites are a common phenomenon in EU Member States (<http://www.emcdda.europa.eu/html.cfm/index5572EN.html> Accessed 31 March 2016). These websites provide information on drug use and health related issues, covering among other things information on substances and health risks involved in their use, guidance on how to deal with these health risks and advice about where to find assistance if needed. Some of these sites also offer tools, to allow visitors to assess their use and provide advice in case of problem drug use. Some sites also include forums to chat with peers or professionals about drug use related issues.

For quite some years so-called e-health applications are also available, offering support for individuals facing problems with substance use. They offer information on self-help and can be used as self-management tools based on cognitive behavioural therapy to reduce or to give up substance use. One well-known example is the German “Quit the shit” application, “an online withdrawal programme for juvenile cannabis consumers who intend to reduce or quit their cannabis consumption. Core element is an interactive diary, where users document their cannabis consumption behaviour on a regular basis - ideally every day - during a period of 50 days. The counselling team supports each participant in achieving the personal goal by providing regular and individual feedback at least once a week.”(http://www.emcdda.europa.eu/html.cfm/index52035EN.html?project_id=DE_01&tab=overview; <https://www.quit-the-shit.net/qts/> Accessed 31 March 2016)

As mentioned earlier (see also 2.2 and 2.4) internet drug marketplaces and drug use related content on social media, internet forums, video sharing sites like YouTube and apps are used for demand and harm reduction purposes. For the surface web various initiatives have been taken in the past years, particularly providing information on how to reduce harm related to the use of drugs sold on surface web shops. Various forums on social media provide relevant information and facilitate an information exchange on health issues between users but also between users and health professionals (Thanki and Frederick, 2016).

There are also interesting initiatives on the dark net. The most well-known example is DoctorX, a General Practitioner in Spain who, as volunteer, provided harm reduction information and advice to dark net forum users amongst others on Silk Road (Caudevilla, 2016).

There are also services offering testing of drugs bought on internet drugs market places to reduce drug use related incidents. Examples are the Energy Control International Drug Testing Service in Spain and DIMS in the Netherlands (Caudevilla, 2016; Van der Gouwe, et al., forthcoming 2016).

3.3. Supply reduction responses

The focus of supply reduction responses to the internet drug markets is, primarily, the illicit drugs markets. Among other things, due to the diverging legal provisions in different EU Member States, some substances are licit in one country while illicit in another, and, due also to the mix of licit and illicit goods available on one market place, there is also some interest in the licit market segment. In a Progress review of the implementation of the EU Drugs Strategy and Action Plan covering the period 2013-2014 nineteen EU Member States (AT, BG, CZ, DE, DK, EE, FI, FR, GR, HU, IE, IT, LT, LV, NL, UK, SE, SK, PL) stated that their law enforcement authorities targeted specifically drug-related crime via Internet. Nine of them reported that regular investigations about drug-related crimes both in the open internet and in the “darknet” are driven by the police or by specialised corps/departments both in the open internet and in the dark net (AT, BG, CZ, DE, EE, FI, NL, PL, SK). ES also recently informed that the National Police has set up a specific group dedicated to this kind of investigations.

Several Member States underlined the importance and success of cooperation between different players (the authorities, police and custom) of different Member States (AT, DK, GR, LE, LT, NL, UK), in some cases also by using the opportunities of participation in EU-funded projects concerning the dark net (AT).

Successes mentioned included the monitoring of the checks of mail and courier shipments in order to detect drug trafficking routes and offenders (DK, IT); the establishment of a working group about drug trafficking via the internet (DE); the creation of an online platform working as a warnings' database about websites associated with cybercrime activities (FR); the introduction of the possibility for authorised customs officers to purchase narcotics on the internet under a covert identity in order to identify perpetrators (FR).

About the concrete **results** of these initiatives, the most recurrent answers can be merged in two main issues:

- > the detection of habits and usual traffic routes, useful for further analysis and the identification of the suspects (DE, DK, FI, IT)
- > arrests and prosecution of drug criminals (AT, DK, FR, IT, LT, NL, UK) (European Commission 2015).

There is a growing understanding that cooperation between EU Member States, but also with other countries is required to increase the effectiveness of measures taken against the internet drug markets, which are for an important part an international phenomenon. This is reflected by a number of EU-financed supply reduction initiatives at EU level in this field.

Overall, dismantling websites and catching buyers of comparatively large drug quantities are mentioned as priorities of law enforcement actions. Dismantling websites is seen as having the most disruptive effect. The underlying assumption is that replacing cryptomarkets is demanding and costly because of the protection requirements. Dismantling a site can also affect the anonymity of buyers and sellers and consequently interferes with the trust in dark net marketplaces. Focusing on intercepting parcels containing drugs by custom services is seen by some as rather labour intensive and just rarely resulting in criminal prosecution of sellers in Europe (Van Slobbe, 2016). Interception of in-country sendings seems to be a rather rare phenomenon, for understandable reasons. Effectively controlling the in-country postal distribution system is simply impossible due to its volume. Nevertheless, there are some law enforcement officials who still see it as an important strategy to undermine trust of sellers and buyers in the anonymity of the market and in each other.

This was also part of the strategy of the ITOM Project (Illegal Trade on Online Marketplaces), an EU-funded project, which also focused on the other weak spot of the cryptomarkets, payment with bitcoins (see under chapter 2, the dark net). The aim of Project ITOM was *"to implement an integrated approach to tackle EU related illegal trade on anonymous marketplaces on the Internet, by initiating coordinated interventions in close cooperation with (inter)national law enforcement agencies including the European Cybercrime Centre (EC3), judicial authorities, other public organisations, and the private sector within the EU."* (Dutch National Prosecutor's Office, no date). One result of the ITOM Project is the formation of an EU cybercrime network looking for effective ways to combat the illegal trade within online marketplaces.

Other law enforcement strategies used are covert operations to infiltrate markets, presenting undercover police officers as interested buyers and arranging a face-to-face meeting. More overt tactics involve making individuals aware of police presence and ensuring that the takedown of markets receives media attention.

Project ITOM's network was also responsible for the European share in Operation Onymous, an international police operation led by the FBI, targeting particularly large cryptomarkets. *"Hundreds of web domains were seized, according to Europol. Seventeen arrests were made, in seventeen countries, and more than a dozen black market websites were taken down, including Silk Road 2.0, Cloud 9, Hydra, Pandora, Blue Sky and Black Market. A total of 414 onion domains were seized."* (Van Slobbe, 2016) However, the long-term impact should not be overestimated: *"The intended effect of removing a large proportion of the cryptomarkets available was not achieved, because a whole range of new drug supply sites popped up within no time. Even after Operation Onymous, major websites such as Agora, Evolution and Andromeda continued their activities. This does not mean, however, that the operations had no effect. Trust in the cryptomarkets took a hit, an effect that was only reinforced by the fact that newcomers to the market are not exactly known for their trustworthiness."* (idem) Other unintended consequences of law enforcement efforts mentioned in the literature are contributing to a diversification of the market and to technological innovation resulting in increased security developments (Soska and Christin, 2015).

Another European initiative is the Austrian led “Joint investigation to combat drug trafficking via the virtual market (darknet) within and also into the EU” (JICDT-VM) project, which started in February 2015 and will run till January 2017, aiming “*to form operational criminal intelligence networks and to carry out investigations in virtual markets on the internet, focused on combatting international drug trafficking in connection with cyber-crime.*” This project includes all 28 EU Member States but also candidate countries and third countries as well as Europol, Eurojust, Interpol, EMCDDA, EC and UNODC. One of its aims is to identify drug dealers as well as consumers within the so-called dark net and to seize illegal drugs and property assets. Another aim is to enhance the cooperation of law enforcement agencies in the involved countries in the fight against international drug trafficking using internet. Communication and cooperation between criminal intelligence investigators, investigators in the virtual environment and experts of cyber-crime is seen as one of the key ingredients of a successful approach.

4. OPTIONS/PRIORITIES FOR FUTURE ACTION

At the end of this meeting the intention is to explore possible ways of common action both at EU and international level.

Taking into account what has been written above about the functioning and impacts of the internet drug markets (see chapter 2) and about the current responses (see chapter 3) the following issues seem to be of interest:

Monitoring

- > What monitoring tools are needed to get a thorough picture of the internet drug markets in the EU and the wider international community?
- > What monitoring tools are needed to facilitate an efficient exchange of information for drug policy making?
- > How can existing tools and mechanisms (by law enforcement and others) be leveraged? Which learnings and experiences from tackling other criminal activities online, are the most pertinent and are replicable?
- > What can be done specifically to monitor the dark net drug markets?
- > What are driving factors behind and explanations for differences between countries in substances marketed, used and purchased (availability and composition of substances, prevalence of substances used, 'trading routes': in which countries drugs are produced, from which countries they are shipped/sent and in which countries are they purchased)?
- > What are priority issues for research regarding the functioning and impact of the internet drug market, including social media, drug forums, etc., which will allow to formulate appropriate demand and supply reduction responses?
- > How can monitoring of the internet drug markets help to formulate appropriate demand and supply reduction responses?

Demand and harm reduction

- > How could prevention strategies be effective for the online environment? Should such prevention strategies be split according to target groups or according to darknet/surface web?
- > What can be done to reduce possible harms related to the use of substances sold on internet? Are there, for instance, effective possibilities to communicate harm reduction messages on the websites and forums, taking into account specifics of different target groups?
- > What is the role and responsibility of the stakeholders (industry, public authorities, civil society) in reducing drug demand and drug harm related to the internet drug markets?
- > How can we best reach the different stakeholders?
- > What kind of appropriate and effective measures could stakeholders (industry, public authorities, civil society) implement to reduce drug demand and drug harm related to the internet drug markets?

Supply reduction

- > What legal framework at national, EU and International level, is required for effectively investigating and combating illicit internet drug markets?
- > What technical tools are needed to increase the effectiveness and impact of investigations (software applications, investigation techniques, etc.)?
- > What is the role and responsibility of the stakeholders (industry, public authorities, civil society) in reducing drug supply on the internet?
- > How can we best reach the different stakeholders?
- > What kind of appropriate and effective control measures could stakeholders (industry, public authorities, civil society) implement to reduce drug supply on the internet (regulation and self-regulation options)?

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