



EUROPE

Internet-facilitated drugs trade

An analysis of the size, scope and the role of the Netherlands: Summary

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Summary

Over the past two decades, the Internet has had a transformative effect on business models in numerous sectors. e-Commerce has improved efficiency of supply chains, facilitated market access and improved transparency for consumers. The potential role of the Internet in facilitating illicit drugs trade was first highlighted by the success of Silk Road; the first major online market place for illegal goods on the dark web. Silk Road was taken down by the FBI in October 2013, but other, very similar markets filled the void within weeks. Today, there are purportedly around 50 so-called cryptomarkets and vendor shops that can only be accessed by using encryption software to ensure anonymity. We use the term ‘cryptomarkets’, but we note that the term ‘dark net markets’ (DNMs) also becomes more established. Cryptomarkets look similar to regular online market places, such as eBay or Amazon, by allowing their customers to search and compare products and rate vendors. These markets bring vendors and buyers together acting under pseudonyms to trade illegal drugs, new psychoactive substances (NPS), prescription drugs and other, often illegal, goods and services.

It is not just the obscure parts of the Internet where drugs are on offer. There are numerous web shops on the clear net, easily found by search engines, which offer mostly NPS, also known as designer drugs that have not been officially banned (yet).

The Netherlands occupies a crucial position in European illicit drug markets. Data from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) suggested it is the main producer of ecstasy and herbal cannabis and a key distribution hub for cannabis resin and cocaine. Whether the pivotal role of the Netherlands also extends to the drugs trade facilitated by the Internet has yet been unclear. While there has been considerable attention paid to the role of the Internet in facilitating drug market from media outlets, the evidence on their size, shape and evolution is fairly limited.

Objectives and methodologies

The study aims to investigate the size and scope Internet-facilitated drugs trade (Section 1.1)

This report aims to investigate the role of the Internet in facilitating drugs trade. It is commissioned by the Research and Documentation Centre (*Wetenschappelijk Onderzoek- en Documentatiecentrum, WODC*), the independent research arm of the Ministry of Security and Justice in the Netherlands. Special attention will therefore be paid to the role of Dutch actors in facilitating this trade.

The overall aims of this study are:

- To characterise the scope and the size of Internet-facilitated drugs trade;
- To identify the role of the Netherlands in Internet-facilitated drugs trade; and

- To delineate potential avenues for law enforcement for detection and intervention

The study considers trade via cryptomarkets as well as drugs trade facilitated by the clear net.

For reasons explained below, the emphasis of the quantitative analysis is on cryptomarkets.

We used a mix of qualitative and quantitative methods (Chapter 2)

In order to address these objectives, a mix-of quantitative and qualitative methods was applied, consisting of: a review of the literature; in-depth interviews with experts and law enforcement representatives; collection and analysis of cryptomarket data; and a review of police case files.

The emphasis of this study was on drugs trade via cryptomarkets. The quantitative assessment of the size and scope of this phenomenon was conducted through collection and analysis of scraped data from eight of the largest cryptomarkets in January 2016. Ironically, it is more straightforward for the researchers to obtain data via web scraping/crawling techniques deployed on cryptomarkets than on the clear net. These techniques identify all pages on a web domain and extract the relevant information. First, because the number of available cryptomarkets is much smaller than that of NPS web shops. And second, because scraped data from the clear net tell us only about substances listed for sale there and their prices, and not the extent to which sales occur. On cryptomarkets, the number of feedbacks can be used as a proxy for transactions.

The quantitative findings were complemented with and compared to findings from the literature, interviews with experts and law enforcement officials and a focus group with law enforcement representatives. Trade of NPS via clear net market places was primarily investigated through literature review and interviews. Where possible, the results were illustrated with findings from analysis of Dutch police case files relating to Internet-facilitated drugs trade.

The size and shape of Internet-facilitated drug markets

On the clear net the size of the online market for NPS is unclear, but the number of web shops has grown considerably in recent years (Sections 4.2.2 and 5.1.4)

We were unable to learn as much about the undoubtedly growing clear net sales of legal substances, compared to sales via cryptomarkets. The research literature here is comparatively limited (in spite of the fact that these markets have existed for longer than cryptomarkets). Nevertheless, we conclude from our analysis that the availability of NPS via web shops on the clear net has increased quickly in recent years. Previous studies identified 60 web shops in the EU in 2008, 314 in 2011 and 651 in 2013. NPS are not controlled by the international drug conventions, but they may pose a public health threat. They can be sold online, provided web shops indicate explicitly that they are not intended for human consumption. Previous research found that numerous different types of designer drugs (often labelled as research chemicals) were offered for sale, including synthetic cannabinoids, opioids, tryptamines, and benzodiazepines. The size of the buyer population is unclear.

Based on literature and interview data, sales of NPS via clear net web shops seemed to be less prominent in the Netherlands than in other European countries. The EU-funded I-TREND study found 19 shops operating from the Netherlands, compared to 207 from the UK and 72 from Poland. These markets are generating an unknown amount of revenue.

The Internet has created new business models for drugs trade (Section 4.2)

Overall, we found that – similar to many markets for licit goods – the Internet has created new business models for drugs trade. Cryptomarkets quickly gained popularity between 2011 and 2013 with the rise and fall of Silk Road 1.0. A month before it was taken down by the FBI, researchers estimated monthly revenues for drugs trade on Silk Road 1.0 at more than US\$7m.

Since then, cryptomarkets have appeared and disappeared again, often following exit scams or take downs. As part of this study, we identified about 50 live cryptomarkets and single-vendor shops on the hidden web. Some 19 of them had at least 400 listings each. The three largest markets, AlphaBay, Nucleus, and Dreammarket, accounted for about 65 per cent of all listings across all products and services. Some eight of the 50 markets identified were scraped for this study, and these eight sites had 105,811 listings (across all products and services), approximately 80 per cent of all listings across all 50 cryptomarkets.

Monthly revenues from drugs on cryptomarkets are in the double-digit million dollars (Section 4.4)

Of all products and services on offer, we found that 57 per cent of listings across the scraped cryptomarkets offered drugs. Our results indicate the eight cryptomarkets analysed for the study generate a total monthly revenue of \$14.2m (€12.6m) and \$12.0m (€ 10.6m) when prescription drugs and alcohol and tobacco are excluded. These figures represent a lower-boundary estimate, due to some limitations of our approach (explained in Section 2.3.2). An upper-boundary estimate for monthly drug revenues via visible listings on all cryptomarkets would be \$25.0m (€22.1m), or \$21.1m (€18.7) without prescription drugs, alcohol and tobacco.

So, despite law enforcement intervention and various exit scams on these marketplaces, cryptomarkets have survived. Yet, they represent a niche part of drugs trade at large, as they constitute a fraction of the total drug market in the offline world. Whereas the total retail value of the European drug market is estimated to amount at least €2bn per month (i.e. at least €24bn annually in 2013), our data suggested monthly revenues for international cryptomarkets in double-digit *million* dollars. Similarly, for the Dutch context, revenues for ‘Dutch vendors’ on cryptomarkets appeared to be much lower than offline revenues.

Cannabis, stimulants and ecstasy are responsible for 70 per cent of all revenues on cryptomarkets included in this study (Section 4.4)

Our findings indicate that the types of drugs sold on cryptomarkets and their relative importance as assessed by sales (transactions and revenues) showed continuity since 2013. Cannabis still generated highest revenues, 31 per cent of all drugs revenues, followed by stimulants (24 per cent, including cocaine and amphetamines), ecstasy-type (16 per cent, including ecstasy and MDMA), psychedelics (8 per cent) and opioids (6 per cent, including heroin). These revenue shares seem to mimic the retail value of different drug types in the offline world, particularly for stimulants and cannabis. Ecstasy-type drugs, however, appeared to be much more popular on cryptomarkets than out on the street, as it only constitutes about 2 per cent of the total European retail value. On the other hand, estimates suggested that heroin takes up around 28 per cent of the total European drugs retail market, whereas our results suggest that the market share of non-prescription opioids (mostly heroin) remains fairly small (6 per cent). In sum, for online markets there is a predominance of drugs typically associated with recreational or ‘party’ use (cannabis, ecstasy, psychedelics).

A possible explanation for these differences between ‘online’ and ‘offline’ markets may be that cryptomarket purchases typically require an element of planning, which may not suit the daily use of dependent users of, for instance, heroin.

How does this compare to the early days of cryptomarkets?

Cryptomarkets have grown substantially in the past few years, but not explosively (Section 4.8)

Drugs trade via cryptomarkets has shown to be resilient to law enforcement intervention and distortion, as new market places quickly emerged and gained market share. Since the heyday of Silk Road 1.0 in 2013, however, we conclude that the evolution of drugs trade via cryptomarkets is one of incremental change, rather than explosive. Comparing to results from Silk Road data scraped by members of our team in September 2013, we found that the distribution of drugs types was very similar in 2016. Revenues have about doubled since then, and the total number of transactions has tripled. The number of listings for drugs has grown by 5.5 times.

Still not just an eBay for Drugs (Section 4.5)

The lion’s share of transactions on cryptomarkets scraped for this study is generated by listings under \$100, most likely to be for personal use. But these retail transactions generate only 18 % of total revenues. We found that large ‘wholesale’ level transactions (those greater than \$1,000) remained important for cryptomarkets, generating nearly one quarter of overall revenue both in September 2013 and in January 2016. The often-used analogy ‘an eBay for drugs’ is not entirely correct, because eBay is intended as an online retail market. This is an important finding. Cryptomarket trade may have an impact beyond creating a new way for drug users to access a wide range of drugs; based on the extent of wholesale transactions, we believe it is likely that many cryptomarket customers are drug dealers sourcing stock intended for offline distribution. Cryptomarkets may therefore be diffusing a wide range of substances into local offline drug markets. For clear net markets, there are some indications based on previous studies that NPS are purchased in wholesale quantities online for the purpose of retail or social supply.

Since the early days of Silk Road 1.0, we have observed a number of trends on cryptomarkets (Section 3.2)

Trust between vendors, buyers and administrators has been considered important for the success of cryptomarkets and their vendors. However, following a series of security failures, scams and law enforcement disruptions and interventions, observers reported declining levels of trust between actors. These may have impacted on the longevity of individual cryptomarkets. Nevertheless, the environment of reduced trust did not appear to have prevented the drugs trade on online marketplaces, and new innovations and developments appeared to have arisen, allowing trade to flourish in spite of these challenges.

Some technical innovations implemented on cryptomarkets are aimed at reducing the risks to vendors and buyers of scams. For example, although not yet widely adopted, multi-signature escrow requires sign-off from two out of three parties, which makes it impossible for one party to single-handedly retrieve funds and disappear. Decentralised markets that operate using a peer-to-peer system, while still in their infancy, have the potential to reduce the possibilities of law enforcement disruption and intervention, as it will be

impossible to take the entire system down. Finally, exit scam risk and fear of law enforcement take down have led some vendors to establish single-vendor shops and to encourage potential buyers to approach them via (encrypted) email or direct messaging.

Shipping routes and the role of the Netherlands

Most revenues are generated by vendors who indicate they are operating from Anglo-Saxon countries or Western Europe (Section 5.1)

We undertook analysis to understand shipping routes via cryptomarkets and the role of the Netherlands in particular. Cryptomarket vendors appeared to be shipping from dozens of countries. For this study we use vendors who self-report that they are shipping from the Netherlands as a proxy for ‘Dutch vendors’. This could be an underestimate, as there are indications that some ‘Dutch vendors’ also offer listings that ship from outside the Netherlands. In this case, vendors would drive across a border to ship from neighbouring countries like Germany.

To our knowledge, and that of the literature, cryptomarkets have primarily manifested themselves in the Anglo-Saxon world and Western Europe. Most vendors appeared to be operating from the United States (890), followed by the United Kingdom (338), and Germany (225). But given their role in production, Asian countries (such as China and India) may also be fertile breeding ground for online drug sales.

Vendors indicating they ship from the United States generate 36 per cent of all drug revenues within our sample. Compared to findings in 2013, the distribution of revenues across countries has not changed much with the exception of Australia, which has seen its share of revenues increase over the past three years. Other Anglo-Saxon (Canada and the United Kingdom) as well as Western European countries (the Netherlands, Germany, Spain, France) also generate substantial proportions of revenues. When comparing per vendor, Australia appeared to generate most revenues per vendor. This is in line with the vastly higher prices of drugs in Australia, which probably translates to higher prices per unit.

Revenues from vendors operating from the Netherlands are by far the largest on a per capita basis (Section 4.4)

Revenues to vendors reporting to operate from the Netherlands accounted for 8 per cent of total drug revenues from the eight markets monitored. On a per capita basis, revenues to vendors operating from the Netherlands were 2.4 times higher than those from the United Kingdom and 4.5 higher than those from the United States.

This perhaps is not surprising given its important role in production and transit of drugs in Europe. Vendors likely to be based in the Netherlands showed clear patterns of specialisation in our analysis, with three quarters of all revenue generated in two drug categories: ecstasy-type drugs (accounting for nearly half of all revenue for these vendors) and stimulants (another quarter). It likely reflects the Netherlands’ role in the production of these drug types, making vendor access to these substances relatively easy and also profitable given their location in the supply chain. Substances, such as MDMA, can be produced inexpensively domestically and then resold for higher prices in other countries. At the wholesale level, this specialisation became even greater, with ecstasy-type and stimulants accounting for 82 per cent of all wholesale revenue for ‘Dutch vendors’.

‘Dutch vendors’ hardly play a role in Cannabis sales (Section 4.4)

Contrary to observations made by various interviewees our results suggested that the share of ‘Dutch vendors’ in cannabis sales within the eight cryptomarkets is smaller than might be expected, given the prominent role of the Netherlands in herbal cannabis production and the transit of cannabis resin. We found that only 10 per cent of drugs revenues for ‘Dutch vendors’ was generated by cannabis and ‘Dutch vendors’ shift about 11 kilos a month, just 2 per cent of the total volume of cannabis we identified on cryptomarkets.

The most common shipping routes for drugs are intra-continental (Section 5.2)

We found that the United States and Oceania (Australia and New Zealand) were the two most common destinations for vendors who specified where they are willing to ship to. Europe came in third position with about \$800,000 in drug revenues. However, it should be noted that it was challenging in this study to trace shipping routes, since more than half of all drug revenues have an unknown destination. The most common routes for drugs were those within United States, within Europe and within Oceania. Here again, given that incomplete or unknown routes account for more than a third of all drug revenues, it was difficult to precisely estimate the share of drug shipping routes.

There is little evidence on the proportion of drugs consumed that are purchased online (Section 5.2)

We could find little evidence from previous research and from the new data collected for this study of the demand side for Internet-purchased drugs in the Netherlands. Scraped cryptomarket data only contained information about the destinations that vendors are willing to ship to. There was no information about buyer locations. Almost no listings were posted by ‘Dutch vendors’ that targeted only customers in the Netherlands. Intelligence from law enforcement seems to confirm that ‘Dutch vendors’ primarily sold to buyers abroad, while Dutch buyers predominantly purchased drugs domestically.

The limited number of studies that reported on consumers buying drugs online found little to no evidence that Dutch customers were using the Internet to buy drugs.

Products and services that can be used to support drug productions, supply or use are available, but revenues are comparatively low (Section 4.7)

Products and services that might be used to support drug production, supply and use, such as counterfeit IDs, financial products and services, or production equipment are also listed on cryptomarkets. They generate sales, albeit in negligible amounts in comparison to drugs themselves. We found that the total revenue generated by these products and services in January 2016 was about 0.2 per cent of the amount generated by drug sales. Only about one in three vendors included in our sample sold non-drug products and services, and these vendors did not tend to also sell drugs. Dutch vendors are nearly absent in this business.

Actors and their modus operandi

The main actors are administrators, moderators, developers, vendors and buyers (Section 6.1)

In addition to estimating the size of cryptomarkets, this report presents a characterisation of the different actors involved in these markets, to feed into the broader understanding of Internet-facilitated drugs

trade. There are several actors (knowingly or unknowingly) involved in Internet-facilitated drugs trade, with key actors on cryptomarkets ranging from administrators (executive management and treasurer), developers (web design and maintenance) and moderators (staff members on the marketplace) to vendors and buyers selling and purchasing on these marketplaces respectively. In addition, other actors that play a supporting role (and may not be aware of their involvement) include bitcoin exchangers, Internet Service Providers, suppliers of legal goods and postal services. Vendors and buyers were analysed in more detail, based on literature, interviews and case file data.

Evidence is limited, but vendors seemed to be young, males from English speaking or Western European countries (Section 6.2)

Based on limited, sometimes anecdotal, evidence from the literature, interviews and case file analysis, it was found that vendors selling drugs on cryptomarkets seemed to be relatively young (under the age of 40), well-educated and entrepreneurial males from Anglo-Saxon countries or Western Europe with strong IT-skills. Although English was the dominant language on cryptomarkets, some vendors did communicate in other languages. Vendors seemed to be a mix of professional drug dealers with close ties to production who consider Internet sales as an additional revenue stream and ‘newbies’ who thus far only sold drugs to friends. Financial, libertarian and (perceptions of increased) safety motives underpin the decision to sell drugs online. There were no studies identified that provided information on the characteristics of vendors involved in clear net drugs trade.

Buyers are attracted to cryptomarkets because of perceived increased safety, improved quality and variety, ease and speed of delivery (Section 6.3)

Similarly, evidence on the consumer side of Internet-facilitated drugs trade is limited. According to previous research and interviewees, buyers on cryptomarkets also seemed to be relatively young, educated and tech-savvy males from Anglo-Saxon and (other) European countries. The majority seemed to consist of recreational drug users (some considered themselves ‘psychonauts’), who have used drugs previously. Buyers seemed to be motivated to buy drugs online due to a perception of increased safety vis-à-vis offline purchases, and improved quality and product variety, anonymity and the ease and speed of delivery. Previous research found that buyers also appreciated the transparency and comprehensiveness of information on products available on cryptomarkets. They tended to base their purchases on price, available ‘trip reports’, products details, vendor reputation and feedback from other buyers.

There is currently insufficient evidence to draw firm conclusions on whether the presence of online drug markets leads to new actors that previously would not have sold or bought drugs offline, or whether the offline market is substituted by online markets.

Modes of detection and intervention

There are four broad categories of modes of detection and intervention (Chapter 7)

Law enforcement is one of three pillars of Dutch drugs policy, alongside prevention and harm reduction. Anecdotal evidence from the literature and interviews suggests that law enforcement activities have had an impact on confidence in cryptomarkets, but on aggregate, the size of trade has grown nonetheless. Previous studies concluded that the main consequence of bringing down marketplaces has been the

migration of vendors and customers to other existing cryptomarkets. It has been suggested that the negative impact of scams on trust within markets might be greater than what law enforcement action could achieve. Also, some authors and interviewees highlighted the potential benefits of Internet-facilitated drugs trade to reducing harms associated with drug markets.

Based on interview and literature data, we identified four broad categories of potential strategies that are available to law enforcement in the detection and intervention of Internet-facilitated drugs trade:

1. Traditional investigation techniques applied in the drug chain (e.g. surveillance, undercover operations);
2. Postal detection and interception (e.g. collaboration between law enforcement agencies and postal services);
3. Online detection (e.g. big data techniques, monitoring of online marketplaces, tracking money flows); and
4. Online disruption (e.g. taking down online marketplaces).

International cooperation and coordination (and the accompanying legal challenges), capacity and resources, and (technical) capabilities could play a facilitating role in deploying the different strategies to tackle Internet-facilitated drugs trade.