

# Legal and Organizational-Technical Aspects of Improving the Prevention of the Distribution of Synthetic Drugs via the Internet

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## ARTICLE INFO

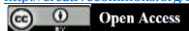
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## ABSTRACT

The global drug market is undergoing a qualitative transformation: the share of synthetic substances and new psychoactive substances (NPS) is growing, and their trade is increasingly conducted via the Internet. Darknet cryptomarkets, "shops" in popular messenger apps, automated chatbots, cryptocurrency payments and "contactless" delivery through hidden caches have made the drug trade anonymous, cross-border and easily accessible to young people. The aim of this article is to reveal the criminological features of the online distribution of synthetic drugs and to develop legal and organizational-technical proposals for improving its prevention in the Republic of Uzbekistan. The study applies systems analysis, comparative legal, formal legal and criminological analysis, and content analysis of reports by international organizations and academic publications; the theory of situational crime prevention and the combination of supply- and demand-reduction strategies serve as its methodological basis. The results identify five criminological features of the online drug trade: anonymity and a network structure with a strict division of functions; a cross-border nature; concealment of financial flows through crypto-assets and third-party "drop" cards; the use of marketing and "customer service" techniques; and a focus on young people as both consumers and couriers. Five problems of national legislation and law enforcement practice are identified, including the lag of individual control lists behind the emergence of new substances, the low speed of blocking online resources, gaps in financial monitoring of crypto-assets, insufficient regulation of electronic evidence and the predominantly offline orientation of prevention. On the basis of foreign experience, a comprehensive prevention model with legal, organizational-technical and social-educational dimensions is proposed, which adapts situational prevention to the online environment. Seven recommendations are formulated, including a generic approach to controlling new psychoactive substances, AI-assisted monitoring with human oversight, and measures to protect young people recruited as couriers.

## Introduction

Illicit drug trafficking is one of the most dangerous forms of transnational crime, posing a threat to human health, social stability and state security. According to the United Nations Office on Drugs and Crime (UNODC), the number of people who used drugs worldwide reached 292 million in 2022 [1] and 316 million in 2023 [13]. At the same time, the global drug market is undergoing significant qualitative changes: the share of synthetic substances is growing, and their trade is increasingly conducted via the Internet.

Synthetic drugs differ from traditional plant-based drugs in that they are easier to produce, do not depend on agricultural raw materials, are highly potent in small quantities, and their chemical composition can be changed quickly. New psychoactive substances are emerging at such a rate that the number of such substances reported by countries to the UNODC Early Warning Advisory has already exceeded one thousand. This poses a serious challenge to legal control mechanisms.

Internet technologies, in turn, have created new opportunities for the distribution of these substances. Darknet cryptomarkets, "shops" on popular messenger apps, automated chatbots, cryptocurrency payments and "contactless" delivery methods have made the drug trade anonymous, freed it from territorial boundaries and made it easily accessible, especially for young people.

In the Republic of Uzbekistan, the legal framework for combating drug abuse is established by the Law "On Narcotic Drugs and Psychotropic Substances" [9], the Criminal Code [11], the Law "On the Prevention of Offences" [10], the Law "On Cybersecurity" [12] and the international drug control conventions to which the country is a party [19–21]. However, the specific nature of drug crimes committed via the Internet requires the prevention system to be adapted to new conditions.

### **Literature review**

The online drug trade began to be actively studied in foreign academic literature in the 2010s. Early studies focused mainly on darknet cryptomarkets. M.J. Barratt was among the first to analyze the Silk Road platform, describing it as an "eBay for drugs" with a rating system for buyers and sellers [4]. J. Martin showed how cryptomarkets transform the global trade in illicit drugs by reducing violence and the visibility of transactions [15]. K. Soska and N. Christin's longitudinal measurement of the online anonymous marketplace ecosystem demonstrated its resilience: after the closure of individual platforms, trade quickly concentrated on new ones [16]. J. Aldridge and D. Décary-Héty showed that a significant share of cryptomarket trade is wholesale in nature and that these platforms serve as a source of supply for offline retail markets [2]. D. Décary-Héty and L. Giommoni found that police crackdowns such as Operation Onymous had only a limited and temporary effect on cryptomarket activity [17].

Subsequent studies turned to mainstream platforms. L. Moyle, A. Childs, R. Coomber and M. Barratt examined the practice of selling and buying drugs through social media and encrypted messaging apps, emphasizing that such trade is far more accessible than the darknet, requires no special technical knowledge and therefore attracts young and inexperienced users [3]. A. Bancroft argued that the darknet and digital technologies make criminal entrepreneurship "smarter", i.e. technologies are used to reduce risk and expand markets [5].

The reports of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA, now the European Union Drugs Agency – EUDA) and Europol regularly analyze the dynamics of the NPS market, its online trade and related control problems [6; 7]. They note, among other things, the spread of synthetic cathinones and synthetic cannabinoids, as well as a "cat-and-mouse" game between regulators and criminal networks.

In the post-Soviet region, a distinctive model of online drug trade is widespread: orders are taken via messenger apps and darknet platforms, and the substance is delivered by leaving it in a hidden location (a so-called "zakladka", or dead drop). The shutdown of Hydra, one of the largest darknet platforms in the region, by German law enforcement authorities in 2022 led to the fragmentation of the market; however, the trade itself did not stop and migrated to other platforms [7].

Uzbek scholars have extensively studied the criminological and criminal-law aspects of drug-related crime and the role of the mahalla and the family in its prevention. However, a comprehensive study of the online drug trade as an independent object of prevention, taking into account its technological features, has not yet been carried out.

The purpose of this article is to reveal the criminological features of the distribution of synthetic drugs via the Internet and to develop legal and organizational-technical proposals aimed at improving its prevention. The research questions are: (1) what are the criminological characteristics of the online trade in synthetic drugs; (2) what problems exist in national legislation and law enforcement practice; (3) what foreign approaches have proven effective; and (4) what prevention model is appropriate for Uzbekistan.

### **Materials and methods**

The material of the study comprised reports of UNODC [1; 13], EMCDDA/EUDA and Europol [6; 7], the Financial Action Task Force [22], national legislation [9–12], international conventions [19–21], foreign legal acts – the EU Digital Services Act [8] and the UK Psychoactive Substances Act 2016 [18] – and peer-reviewed academic publications [2–5; 15–17].

The study used systems analysis, comparative legal, formal legal and criminological analysis, logical generalization, and content analysis of reports and publications. The methodological basis of the prevention model is the combination of "demand reduction" and "supply reduction" strategies together with the theory of situational crime prevention developed by R. Clarke and D. Cornish [14; 24]. According to this theory, crime can be significantly reduced by increasing the effort required to commit it, increasing its risks, reducing its rewards, reducing provocations and removing excuses. Each link in the online drug supply chain was analyzed in terms of which of these techniques can be applied to it.

## **Results**

### ***1. Criminological characteristics of the online drug trade***

The study identified the following main features of the distribution of synthetic drugs via the Internet.

First, anonymity and a network structure. Online drug trafficking networks are based on a strict division of functions: organizers, "operators" (who communicate with buyers), "warehouse keepers", couriers, those who carry out financial transactions, and recruiters. Each link knows only its own task and has no direct contact with other participants. This makes it difficult to identify the organizers even when lower-level participants are exposed.

Second, a cross-border nature. Organizers, servers, means of payment and perpetrators may be located in different countries, which complicates jurisdiction, mutual legal assistance and the obtaining of evidence.

Third, the concealment of financial transactions. Payments are made through cryptocurrencies, e-wallets and the bank cards of third parties known as "drops", and the proceeds are laundered through multi-stage transactions.

Fourth, the use of marketing and "customer service" elements. Online "shops" employ advertising campaigns, discounts, "bonuses" and "quality guarantees", presenting drugs as ordinary consumer goods and downplaying their risks.

Fifth, a focus on young people. The online drug trade draws young people in both as consumers and as perpetrators (couriers), who are often recruited through fake job advertisements on social media.

**Table 1**

**Links of the online drug supply chain and opportunities for intervention**

| <b>Link in the criminal chain</b>          | <b>Main function</b>                                          | <b>Opportunities for prevention and intervention</b>                                         |
|--------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Organizers and producers                   | Synthesizing or importing the substance, managing the network | Control over precursors, international cooperation, financial investigation                  |
| Online platforms and operators             | Advertising, taking orders, running chatbots                  | Identifying and blocking resources, cooperation with platforms, digital monitoring           |
| Financial link                             | Receiving payments, laundering proceeds                       | Detecting suspicious transactions, measures against "drop" cards, oversight of crypto-assets |
| Couriers and "stash placers" (zakladchiki) | Delivering the substance and placing it in hidden locations   | Preventing the recruitment of young people, legal literacy, combating fake job offers        |
| Consumers                                  | Ordering and using the substance                              | Demand reduction, awareness-raising, early detection and treatment                           |

*Source: developed by the author.*

**2. Problems in national legislation and law enforcement practice**

First, control lists lag behind. With new psychoactive substances emerging rapidly, adding each new compound to the control list individually takes time, during which criminal networks use unregulated analogues. A number of foreign countries apply a generic or analogue approach that places an entire group of substances with a similar chemical structure under control at once.

Second, the effectiveness of blocking Internet resources. Channels and bots advertising drugs reappear under new names shortly after being shut down, so the speed and degree of automation of blocking are decisive.

Third, financial control mechanisms. To detect payments made through crypto-assets and third parties' bank cards, information exchange with banks, payment institutions and crypto-asset service providers needs to be improved in line with the risk-based approach recommended by FATF [22].

Fourth, handling electronic evidence. Investigation of online drug crimes requires improved procedural rules for collecting, preserving and evaluating messenger correspondence, cryptocurrency transactions and geolocation data, as well as upgrading investigators' skills in digital forensics.

Fifth, the predominantly offline orientation of prevention. Awareness-raising is often conducted in traditional formats (lectures, meetings) and does not cover the digital environment in which young people spend much of their time. Educational work focuses mainly on the harms of drug use, while the risk of young people being recruited as couriers receives little attention.

**3. Foreign experience**

In the European Union, international operations to take down darknet platforms are regularly carried out under Europol coordination, and the Digital Services Act obliges online platforms to process notices of illegal content promptly and to cooperate with competent authorities [8]. A number of countries have introduced generic control systems for NPS. In the United Kingdom, the Psychoactive Substances Act 2016 introduced a general ban, subject to exemptions, on the production and supply of

substances with psychoactive effects for human consumption [18]. In combating the recruitment of young people to transport drugs ("county lines"), UK guidance treats recruited young people also as victims of criminal exploitation and refers them to the social protection system [23].

#### **4. A comprehensive model of prevention**

Based on these results, a comprehensive model is proposed for preventing the distribution of synthetic drugs via the Internet along three dimensions (Table 2).

**Table 2**

**Comprehensive model for the prevention of the online distribution of synthetic drugs**

| <b>Dimension</b>         | <b>Objective</b>                                                      | <b>Key measures</b>                                                                                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legal                    | Reducing supply and closing legal gaps                                | Generic approach to NPS; procedure for promptly blocking online advertising; procedural framework for electronic evidence; provisions encouraging deceived young people to come forward voluntarily |
| Organizational-technical | Reducing opportunities for criminal activity and increasing its risks | AI-based digital monitoring; information exchange with platforms, banks and crypto-providers; training in digital forensics; international cooperation                                              |
| Social-educational       | Reducing demand and preventing recruitment of young people            | Online campaigns in young people's language; peer education; guides for parents; anonymous helpline; promoting youth employment                                                                     |

*Source: developed by the author.*

The model adapts the principles of situational prevention to the online environment. Legal and organizational-technical measures act on supply by increasing the effort required (blocking advertising, restricting payment channels) and increasing risks (tracing financial trails, effectively collecting electronic evidence). Social-educational measures act on demand by reducing the number of consumers and the pool of "labour" for courier work and by removing the excuses used in recruitment ("it's just a delivery job").

#### **Discussion**

##### ***Situational prevention in the online environment***

The results are consistent with the findings that law enforcement takedowns alone have limited and temporary effects on online drug markets [16; 17]: after the closure of Hydra, the market fragmented but did not disappear [7]. This confirms that supply-side measures must be combined with demand reduction and with measures targeting the most replaceable link – couriers recruited from among young people. From the standpoint of situational prevention theory [24], the most cost-effective interventions are those that raise effort and risk at the points where the online and offline parts of the chain meet: payment and delivery.

##### ***Interagency and international cooperation***

Interagency coordination is crucial to implementing the model. It is proposed to establish a unified information-sharing platform linking the internal affairs bodies, the State Security Service, the Ministry of Digital Technologies, the Central Bank, the National Agency for Perspective Projects (the authorized body for crypto-assets), the Ministry of Health, the education system and the Youth Affairs Agency. Such a platform would enable rapid dissemination of information on new substances, online resources and recruitment methods.

The Republic of Uzbekistan is a party to the 1961 Single Convention on Narcotic Drugs, the 1971 Convention on Psychotropic Substances and the 1988 Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances [19–21], which establish schedules of controlled substances, precursor control and mechanisms for legal assistance. Given the cross-border nature of the online drug trade, it would be advisable to develop mechanisms for the rapid exchange of information on online resources, cryptocurrency wallets and recruitment schemes among Central Asian states, and to expand training for investigators in cooperation with UNODC.

### ***Medical-social aspect and the role of the mahalla***

Since synthetic substances can cause severe mental and somatic complications within a short time, early identification of young people who have started using drugs and the provision of qualified medical and psychological care are of great importance. Families and young people should be made aware of opportunities for anonymous counselling and treatment, and efforts should be made to reduce the stigma that prevents young people from seeking help. Training materials should be prepared for school psychologists and family doctors on the early signs of synthetic substance use, and the referral system between them and addiction treatment services improved.

The mahalla youth leader, the prevention inspector and social workers know well the young people who are unemployed, out of education or living in difficult family circumstances – precisely the main target group for recruitment as couriers. Targeted referral of these young people to employment, vocational training and social support programmes directly reduces the pool of "labour" available to criminal networks. The UK approach of treating recruited young people as victims of exploitation [23] supports the proposal to mitigate liability for those who were deceived or coerced and come forward voluntarily.

### ***Digital monitoring and artificial intelligence***

Since the online drug trade uses mainstream platforms for advertising and communication, automated detection of such content is an important technical tool. Machine learning models analyzing text and images can identify features characteristic of drug advertising (specific slang, coded symbols, "shop" avatars), flag suspicious bots and channels and queue them for review by human experts. The use of such systems must observe safeguards for privacy and personal data protection and uphold the principle that final decisions are made by humans.

### ***Rethinking the educational approach***

General fear-based messaging is of low effectiveness among young people. Content that is evidence-based, disseminated in young people's own language and on the platforms they use, and produced with their participation inspires greater trust. Educational work should prioritize information on the unknown composition of synthetic substances and the risk of poisoning, the fraudulent nature of online "shops", and the criminal-law consequences of working as a courier.

### ***Limitations***

The study is based on secondary sources and legal analysis; national statistics on online drug crimes and the age structure of offenders were not available in a disaggregated form. The effectiveness of the proposed model should be tested through pilot implementation and evaluation against outcome indicators, which is a direction for further research.

### ***Conclusion***

The study made it possible to draw the following conclusions. First, the distribution of synthetic drugs via the Internet is an independent form of drug crime characterized by anonymity, a network

structure, a cross-border nature and a focus on young people. Second, the current prevention system is designed mainly for the offline environment and does not fully take into account the technological features of the online drug trade. Third, effective prevention requires a combination of legal, organizational-technical and social-educational measures aimed at reducing supply and demand simultaneously.

Based on the above, the following proposals are put forward:

1. To consider introducing provisions into the Law "On Narcotic Drugs and Psychotropic Substances" that would allow new psychoactive substances to be placed under control by chemical group (a generic approach).
2. To improve the procedure for promptly restricting access to Internet resources advertising narcotic drugs and psychotropic substances on the basis of a conclusion of the authorized body, and to use AI-based monitoring systems with human oversight in this process.
3. To develop model indicators of suspicious transactions related to the online drug trade for banks, payment institutions and crypto-asset service providers, and to establish a procedure for information exchange with them.
4. To clarify in criminal procedure legislation the procedure for collecting, preserving and evaluating electronic evidence, and to introduce specialized digital forensics training programmes for investigative bodies.
5. To examine grounds for mitigating the liability of young people who were drawn into the drug business through deception or coercion and who have voluntarily come forward to law enforcement agencies.
6. To introduce peer-education programmes in educational institutions on synthetic substances and the risks of online recruitment, and to conduct regular awareness campaigns aimed at young people on social media.
7. To establish a unified platform for interagency information exchange and to introduce a system for evaluating the effectiveness of prevention based on outcome indicators.

The implementation of these proposals will help reduce the operational capabilities of online drug trafficking networks and shrink their pool of "labour" and consumers, thereby strengthening the health of young people and public safety.

## References

1. UNODC. World Drug Report 2024. – Vienna: United Nations Office on Drugs and Crime, 2024.
2. Aldridge J., Décary-Héту D. Hidden Wholesale: The Drug Diffusing Capacity of Online Drug Cryptomarkets // International Journal of Drug Policy. – 2016. – Vol. 35. – P. 7–15.
3. Moyle L., Childs A., Coomber R., Barratt M.J. #Drugsforsale: An Exploration of the Use of Social Media and Encrypted Messaging Apps to Supply and Access Drugs // International Journal of Drug Policy. – 2019. – Vol. 63. – P. 101–110.
4. Barratt M.J. Silk Road: eBay for Drugs // Addiction. – 2012. – Vol. 107, № 3. – P. 683.
5. Bancroft A. The Darknet and Smarter Crime: Methods for Investigating Criminal Entrepreneurs and the Illicit Drug Economy. – Cham: Palgrave Macmillan, 2019. – 158 p.
6. EMCDDA, Europol. EU Drug Market: New Psychoactive Substances. – Luxembourg: Publications Office of the European Union, 2024.

7. EMCDDA, Europol. EU Drug Markets Analysis 2024: Key Insights for Policy and Practice. – Luxembourg: Publications Office of the European Union, 2024.
8. Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services (Digital Services Act) // Official Journal of the European Union. – L 277. – 27.10.2022.
9. Law of the Republic of Uzbekistan "On Narcotic Drugs and Psychotropic Substances". No. 813-I of 19.08.1999.
10. Law of the Republic of Uzbekistan "On the Prevention of Offences". No. ZRU-371 of 14.05.2014.
11. Criminal Code of the Republic of Uzbekistan. – Tashkent: Adolat, 2024.
12. Law of the Republic of Uzbekistan "On Cybersecurity". No. ZRU-764 of 15.04.2022.
13. UNODC. World Drug Report 2025. – Vienna: United Nations Office on Drugs and Crime, 2025.
14. Clarke R.V. (ed.). Situational Crime Prevention: Successful Case Studies. 2nd ed. – Guilderland, NY: Harrow and Heston, 1997. – 357 p.
15. Martin J. Drugs on the Dark Net: How Cryptomarkets Are Transforming the Global Trade in Illicit Drugs. – Basingstoke: Palgrave Macmillan, 2014. – 96 p.
16. Soska K., Christin N. Measuring the Longitudinal Evolution of the Online Anonymous Marketplace Ecosystem // Proceedings of the 24th USENIX Security Symposium. – Washington, D.C., 2015. – P. 33–48.
17. Décary-Héту D., Giommoni L. Do Police Crackdowns Disrupt Drug Cryptomarkets? A Longitudinal Analysis of the Effects of Operation Onymous // Crime, Law and Social Change. – 2017. – Vol. 67, № 1. – P. 55–75.
18. Psychoactive Substances Act 2016 (c. 2). – London: The Stationery Office, 2016. – URL: <https://www.legislation.gov.uk/ukpga/2016/2>
19. Single Convention on Narcotic Drugs, 1961, as amended by the 1972 Protocol. – New York: United Nations, 1975.
20. Convention on Psychotropic Substances, 1971. – New York: United Nations, 1971.
21. United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988. – Vienna: United Nations, 1988.
22. FATF. Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers. – Paris: FATF, 2021.
23. Home Office. Criminal Exploitation of Children and Vulnerable Adults: County Lines Guidance. – London: Home Office, 2018.
24. Cornish D.B., Clarke R.V. Opportunities, Precipitators and Criminal Decisions: A Reply to Wortley's Critique of Situational Crime Prevention // Crime Prevention Studies. – 2003. – Vol. 16. – P. 41–96.