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STUDY GUIDE

UNODC

UNMASKING THE DARK WEB: COMBATING DIGITAL DRUG TRADE AND CYBERCRIME

LETTER FROM SECRETARY GENERAL

Dear Delegates,

Welcome to the 6th edition of DPS Kolar Model United Nations! As we gather from October 4-6, 2024, under the theme "IGNITING CHANGE - Youth Leadership for Global Progress," we are reminded of the immense potential young leaders like yourselves have in shaping the future.

These study guides are your starting point, providing valuable insight into the global issues that demand our attention, from climate change to artificial intelligence and global equity. But they are just that – a starting point. The real value of this MUN comes from your own research, critical thinking, and the innovative solutions you bring to the table.

I urge you to dive deep into your committee's agendas, not just seeking solutions but also understanding the complexities behind them. This conference is about more than passing resolutions; it's about learning, listening, and growing as global citizens. Diplomatic success comes not just from speaking but from understanding different perspectives, building consensus, and forming meaningful collaborations.

Outside the formal sessions, take time to engage with your fellow delegates. Often, it's in the casual conversations and brainstorming moments where the best ideas and lasting friendships are formed.

As you prepare for this exciting journey, trust in your own voice, challenge the status quo, and don't be afraid to take bold steps. This MUN is your chance to lead, inspire, and ignite the change you wish to see in the world.

Looking forward to the debates, discussions, and ideas you will bring. Let's make this a transformative and impactful experience for all.

Warm regards,
Navya Parwani
Secretary General
DPS Kolar MUN

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UNODC

Unmasking the Dark Web: Combating Digital Drug Trade and Cybercrime

The United Nations Office on Drugs and Crime (UNODC) is a global leader in the fight against illegal drugs and international crime, in addition to being responsible for implementing the United Nations lead programme on terrorism. Established in 1997, UNODC has approximately 500 staff members worldwide.

UNODC works to educate people throughout the world about the dangers of drug abuse and to strengthen international action against illicit drug production, trafficking and drug-related crime. It also improves crime prevention and assists with criminal justice reform to strengthen the rule of law, promote stable and viable criminal justice systems and combat the growing threats of transnational organised crime and corruption.

The other content is that of the Deep Web, which has not been indexed by traditional search engines such as Google. The furthest corners of the Deep Web, segments known as the Dark Web, contain content that has been intentionally concealed. The Dark Web may be used for legitimate purposes as well as to conceal criminal or otherwise malicious activities. It is the exploitation of the Dark Web for illegal practices that have garnered the interest of officials and policymakers.

Anonymizing services such as Tor have been used for legal and illegal activities ranging from maintaining privacy to selling illegal goods like drugs and others. They may be used to circumvent censorship, access blocked content, or maintain the privacy of sensitive communications or business plans. However, a range of malicious actors, from criminals to terrorists to state-sponsored spies, can also leverage cyberspace and the Dark Web can serve as a forum for conversation, coordination, and action. It is unclear how much of the Dark Web is dedicated to serving a particular illicit market at any one time, and, because of the anonymity of services such as Tor, it is even further unclear how much traffic is flowing to any given site.

Cybercrime, a persuasive threat, is impacting millions of individuals worldwide, compromising their personal data, financial security, and digital privacy. The complex nature of the crime as one that takes place in the borderless realm of cyberspace is compounded by the increasing involvement of organized crime groups. Perpetrators of cybercrime and their victims can be located in different regions, and its effects can ripple through societies around the world, highlighting the need to mount an urgent, dynamic, and international response.

UNODC promotes long-term and sustainable capacity building in the fight against cybercrime through supporting national structures and action. Specifically, UNODC draws upon its specialized expertise on criminal justice systems response to provide technical assistance in capacity building, prevention and awareness-raising, international cooperation, and data collection, research, and analysis on cybercrime.

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Introduction

Overview of the dark web and cybercrime

The dark web is a concealed portion of the deep web, made accessible only through special encryption technologies like the Tor network. This layer is intentionally hidden from the general public and can only be accessed with specific software, settings, or authorisation. It's designed to offer users complete anonymity and privacy for their online activities, which range across both lawful and unlawful spectrums.

The dark web has a reputation as a haven for criminal activities due to its focus on privacy. However, it also serves vital roles in protecting free speech, aiding in secure communication for dissidents under oppressive regimes, and allowing cybersecurity professionals to conduct anonymous research.

The Malicious Side of the Dark Web:

The dark web's anonymity and encryption make it an attractive platform for these illicit activities, as it significantly hinders law enforcement efforts to track and apprehend the perpetrators. It's become a hub for a wide range of illegal activities and cybercrime. Some of the most prevalent illicit activities taking place on the dark web include:

- **Drug trafficking:** The dark web has emerged as a major marketplace for the sale of recreational and pharmaceutical drugs, with vendors offering a wide variety of illegal substances.
- **Weapons trading:** Firearms, explosives, and other weapons are also sold on dark web marketplaces, often to individuals unable to obtain them through legal channels.
- **Human trafficking:** The anonymity provided by the dark web has made it a platform for the exploitation of vulnerable individuals, including sex trafficking and the sale of personal information.
- **Child exploitation:** Horrifyingly, the dark web is also used to distribute child pornography and other exploitative content involving minors.
- **Stolen data and identity theft:** Cyber criminals use the dark web to buy and sell stolen personal information, such as credit card details, social security numbers, and hacked account credentials.
- **Hacking and malware distribution:** The dark web serves as a marketplace for hacking tools, malware, and other cyber crime services, enabling threat actors to coordinate attacks and distribute malicious code.
- **Assassination services:** One of the most disturbing aspects of the dark web is the existence of "assassination markets", where individuals can pay to have someone killed.
- **Extremist and terrorist activities:** The dark web also provides a platform for the spread of extremist ideologies, the coordination of terrorist activities, and the dissemination of related content.

The scale and impact of digital drug trade

According to a 2023 report by the United Nations Office on Drugs and Crime (UNODC), the global market for illicit drugs is estimated to be worth over $300 billion annually. The dark web has played a pivotal role in expanding the reach and accessibility of these substances, particularly in regions with strict drug laws.

Cybercrime encompasses illegal activities conducted via the Internet or other digital means. These crimes range from hacking, identity theft, and financial fraud to more complex activities like cyberterrorism and the digital drug trade. The anonymity provided by the dark web significantly facilitates these activities, enabling criminals to operate with a reduced risk of detection.

Interconnection between the Dark Web and Cybercrime: The dark web serves as a critical platform for cybercriminals, providing them with the tools and marketplaces needed to engage in illegal activities while minimizing the chances of being tracked by law enforcement. The encrypted environment of the dark web allows cybercriminals to exchange information, trade in illicit goods, and collaborate on illegal enterprises, all while maintaining their anonymity.

UNODC's Role in Combating Cybercrime

UNODC promotes long-term and sustainable capacity building in the fight against cybercrime through supporting national structures and action. Specifically, UNODC draws upon its specialized expertise on criminal justice systems response to provide technical assistance in capacity building, prevention and awareness-raising, international cooperation, and data collection, research, and analysis on cybercrime.

UNODC has developed several initiatives to combat cybercrime, including the Global Programme on Cybercrime, which provides training and capacity-building support to law enforcement agencies around the world.

The organization has also published numerous reports and studies on cybercrime trends and best practices.

Understanding the Dark Web

Definition and structure of the dark web

The Dark Web is a network that constitutes a part of the global Internet platform not indexed by search engines, which requires some form of authentication to gain access. Such authorization may require using specific software, such as proxy software, to gain access to the Dark Web websites.

The Dark Web uses traffic anonymization techniques to protect organizations and individuals running small and large communication networks that make up the Dark. Dark Web information can be scattered in many different sources and can be changed quickly over time, and as such, makes it difficult to locate the source of information. While such techniques offer a high level of security and privacy for the Dark Web users, they also make the Dark Web URLs inaccessible by standard internet browsers.

Technologies Enabling Anonymity

- **Tor (The Onion Router):** This is the most widely used dark web browser, known for its ability to provide strong anonymity by routing traffic through a network of volunteer-operated servers. Tor uses a layered encryption system, similar to the layers of an onion, to protect user privacy.
- **I2P (Invisible Internet Project):** Similar to Tor, I2P is a decentralized network designed to protect user privacy by routing traffic through a mesh of nodes. I2P is particularly useful for creating anonymous websites and services.

Legitimate uses vs. criminal activities

While the dark web is often linked to illegal activities, it also serves some legitimate purposes. For instance, journalists and activists might use it to communicate anonymously and safeguard their identities. Moreover, some people turn to the dark web to find information that is censored or restricted in their home countries. The amount of criminal activity on the dark web far surpasses its legitimate uses. It has become a hotspot for illegal activities, such as the sale of drugs, weapons, and stolen data. Additionally, it is a platform for human trafficking, child exploitation, and other serious crimes.

Digital Drug Trade

Online Drug Marketplaces

Drug trafficking is a global illicit trade involving the cultivation, manufacture, distribution and sale of substances which are subject to drug prohibition laws. UNODC is continuously monitoring and researching global illicit drug markets in order to gain a more comprehensive understanding of their dynamics.

At current levels, world heroin consumption (340 tons) and seizures represent an annual flow of 430-450 tons of heroin into the global heroin market. Of that total, opium from Myanmar and the Lao People's Democratic Republic yields some 50 tons, while the rest, some 380 tons of heroin and morphine, is produced exclusively from Afghan opium.

While approximately 5 tons are consumed and seized in Afghanistan, the remaining bulk of 375 tons is trafficked worldwide via routes flowing into and through the countries neighbouring Afghanistan.

The Balkan and northern routes are the main heroin trafficking corridors linking Afghanistan to the huge markets of the Russian Federation and Western Europe. The Balkan route traverses the Islamic Republic of Iran (often via Pakistan), Turkey, Greece and Bulgaria across Southeast Europe to the Western European market, with an annual market value of some $20 billion. The northern route runs mainly through Tajikistan and Kyrgyzstan (or Uzbekistan or Turkmenistan) to Kazakhstan and the Russian Federation. The size of that market is estimated to total $13 billion per year.

In 2008, global heroin seizures reached a record level of 73.7 metric tons. Most of the heroin was seized in the Near and Middle East and South-West Asia (39 per cent of the global total), South-East Europe (24 per cent) and Western and Central Europe (10 per cent). The global increase in heroin seizures over the period 2006-2008 was driven mainly by continued burgeoning seizures in the Islamic Republic of Iran and Turkey. In 2008, those two countries accounted for more than half of global heroin seizures and registered, for the third consecutive year, the highest and second highest seizures worldwide, respectively.

In 2007 and 2008, cocaine was used by some 16 to 17 million people worldwide, similar to the number of global opiate users. North America accounted for more than 40 per cent of global cocaine consumption (the total was estimated at around 470 tons), while the 27 European Union and four European Free Trade Association countries accounted for more than a quarter of total consumption. These two regions account for more than 80 per cent of the total value of the global cocaine market, which was estimated at $88 billion in 2008.

For the North American market, cocaine is typically transported from Colombia to Mexico or Central America by sea and then onwards by land to the United States and Canada. Cocaine is trafficked to Europe mostly by sea, often in container shipments. Colombia remains the main source of the cocaine found in Europe, but direct shipments from Peru and the Plurinational State of Bolivia are far more common than in the United States market.

Cryptocurrency and Anonymous Transactions

Cryptocurrencies are anonymous and untraceable. The cryptocurrency system is decentralized, meaning there is no central server, administrator or manager. It is based on a network distributed across a large number of computers with users completing transactions through applications on smartphones or computers. Therefore, for law enforcement officials

to freeze and confiscate cryptocurrency, they need to gain control of a user's cryptocurrency wallet and transfer the criminal proceeds to the law enforcement agency's own wallet.

Bitcoin remains the most commonly used cryptocurrency for drug purchases on the dark web. According to a 2023 report by Chainalysis, Bitcoin accounted for **over 70%** of cryptocurrency-related criminal activity, including the drug trade.

Cryptocurrencies can be used to conduct transactions across borders, making it easier for drug traffickers to operate on a global scale.

Impact on global drug trafficking patterns

1. **Chainalysis' "Crypto Crime Report" and Interpol's "Cybercrime Threat Assessment"**

Chainalysis' "Crypto Crime Report" provides a comprehensive analysis of cryptocurrency-related crime, including the drug trade. It explores the role of various cryptocurrencies in illicit activities, the tactics used by criminals, and the challenges faced by law enforcement. Key findings often include:

- **Prevalence of Cryptocurrency in Crime:** The report quantifies the amount of cryptocurrency used in illicit activities, such as drug trafficking, ransomware, and fraud.
- **Emerging Trends:** It identifies new trends in cryptocurrency-related crime, such as the use of decentralized finance (DeFi) protocols for money laundering.
- **Law Enforcement Challenges:** The report discusses the difficulties faced by law enforcement agencies in tracing cryptocurrency transactions and identifying criminals.

2. **Interpol's "Cyber Crime Threat Assessment"** is a broader report that examines the global cybercrime landscape. While it doesn't focus solely on cryptocurrencies, it does discuss the challenges posed by their use in illicit activities. Key findings often include:
    - **The Growing Threat of Cybercrime:** The report highlights the increasing sophistication and impact of cybercrime, including ransomware attacks and data breaches.
    - **Cryptocurrency as a Facilitator:** It discusses how cryptocurrencies can be used to launder money, fund terrorism, and facilitate other criminal activities.
    - **International Cooperation:** The report emphasizes the need for international cooperation to combat cybercrime, including efforts to trace cryptocurrency transactions and dismantle criminal networks.

Types of Cybercrime

Ransomware and Malware Attacks

- **Ransomware:** Ransomware is malicious software that, once gaining access and being installed on your device, will encrypt all the data and require a ransom to be paid to return access to the data. Unfortunately, paying the ransom does not in any way guarantee access will be granted to the data. Experts estimate that ransomware attacks will globally occur every 11 seconds, resulting in total damage costs of US$ 20 billion in 2021.
- **Malware:** Malware, short for malicious software, refers to any intrusive software developed by cybercriminals (often called hackers) to steal data and damage or destroy computers and computer systems. Examples of common malware include viruses, worms, Trojan viruses, spyware, adware, and ransomware.
- **Identity theft and fraud** is the crime of using the personal or financial information of another person to commit fraud, such as making unauthorized transactions or purchases. Identity theft is committed in many different ways and its victims are typically left with damage to their credit, finances, and reputation.

  During the pandemic, the popularity of digital payments, e-commerce apps, and cryptocurrencies increased, with people spending more time at home online. This created an important market for organized crime groups to invest in. The fourth reason is that the pandemic had significant negative effects on the ability of law enforcement to investigate crime. The travel and investigation limitations imposed as a response to the pandemic, combined with the remote locations of some of the casinos, as well as the impunity afforded to offenders through their relationships with corrupt government officials, meant that criminal operations could expand with little scrutiny. In response to these challenges, organized crime groups identified opportunities to develop new revenue streams by committing online scams and fraud, targeting people in Asia, North America, Europe, and other regions of the world.

Hacking and Data Breaches

Hacking is a term used to describe unauthorized access to systems, networks, and data (hereafter target). Hacking may be perpetrated solely to gain access to a target or to gain and/or maintain such access beyond authorization. Examples of national and regional laws criminalizing intentional unauthorized access (see Cybercrime Module 3 on Legal Frameworks and Human Rights, for information on the levels of criminal culpability as they relate to cybercrime) to a website or information by bypassing security measures are the United Arab Emirates, Article 1 of Federal Law No. 2 of 2006 on the Prevention of Information Technology Crimes, and Article 2 of the Council of Europe's Convention on Cybercrime (a.k.a. Budapest Convention; hereafter Cybercrime Convention).

Hackers may also seek unauthorized access to systems to cause damage or other harm to the target. In 2014, Lauri Love, a British hacker, defaced websites, gained unauthorized access to United States Government systems and stole sensitive information from these systems (Parkin, 2017). This cybercrime compromised the confidentiality of data (by gaining unauthorized access to the website and system and stealing information) and the integrity of data (by defacing websites).

Cyber-Enabled Trafficking and Exploitation

Technology increases the ease with which traffickers can locate, recruit, coerce and control their victims. Technology and the Internet - both cybercrime tools - are harnessed by the sophisticated end of the trafficker spectrum (Latonero, Wex and Dank, 2015; Latonero, 2012; Latonero, 2011). They can use these tools at each stage of the process, from the identification and recruitment of potential victims, through the process of coercion and control, to advertising and selling goods and services produced from their exploitation and finally to the laundering of profits. The use of technology can apply to all types of trafficking.

The communication opportunities afforded to traffickers by technology within and beyond their own organized groups has been recognized. One such example involved a paedophile publisher's advice to other paedophiles on websites on the dark web, such as Love Zone (Davies, 2016). The proliferation of information goes beyond mere communication among individual criminal groups. It facilitates illicit business and abusive opportunities.

Exploitation: Human beings are considered a commodity offline and online (Maras, 2016; Maras, 2018). For-profit, traffickers advertise human beings and services they can provide, seeking clients to purchase these services. These traffickers advertise on Clearnet (the visible web) and the deep web.

The deep or "dark" web is part of the World Wide Web that is not discoverable by open search engines. Content is often password-protected and encrypted. It has been used for illicit activities and hampers law enforcement investigations of human trafficking by making it more difficult for investigators to identify the traffickers. Encryption is encouraged in legitimate business (such as legal services or health records) and different jurisdictions allow for differing levels of State access and surveillance. However, human beings are primarily sold on easily accessible websites because traffickers want to ensure their ads are accessible to the greatest number of clients, many of whom may not be technologically proficient

Technological Aspects of Cybercrime

Encryption and steganography

1. **Encryption:** Encryption is used to protect data from being stolen, changed, or compromised and works by scrambling data into a secret code that can only be unlocked with a unique digital key.

   Encrypted data can be protected while at rest on computers or in transit between them, or while being processed, regardless of whether those computers are located on-premises or are remote cloud servers.
2. **Steganography:** Steganography is the technique of hiding data within an ordinary, no secret file or message to avoid detection; the hidden data is then extracted at its destination. Steganography use can be combined with encryption as an extra step for hiding or protecting data. Steganography can be used to conceal almost any type of digital content, including text, image, video or audio content. The secret data can be hidden inside almost any other type of digital content. The content to be concealed through steganography -- called hidden text -- is often encrypted before being incorporated into the innocuous-seeming cover text file or data stream. If not encrypted, the hidden text is commonly processed in some method to increase the difficulty of detecting the secret content.

Virtual Private Networks (VPNs)

VPNs: These create a secure tunnel between a user's device and a remote server, encrypting their internet traffic and making it difficult to track their online activities. While VPNs can be used for legitimate purposes, such as protecting privacy and accessing geo-restricted content, they can also be used by criminals to hide their tracks.

Blockchain Technology and Cryptocurrencies

Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network.

An asset can be tangible (a house, car, cash, land) or intangible (intellectual property, patents, copyrights, branding). Virtually anything of value can be tracked and traded on a blockchain network, reducing risk and cutting costs for all involved.

Emerging Technologies in Cybercrime

1. **Artificial Intelligence (AI):** AI can be used to automate cyberattacks, analyze large amounts of data, and create new forms of malware. According to a 2019 Forrester Research report, 80% of cybersecurity decision-makers expected AI to increase the scale and speed of attacks and 66% expected AI “to conduct attacks that no human could conceive of.”
2. **Internet of Things (IoT):** IoT devices, such as smart home devices and industrial sensors, can be vulnerable to cyberattacks.

3. **Deepfakes:** These are synthetic media that can be used to create realistic but fake images, videos, or audio recordings. Deepfakes can be used to spread misinformation and disinformation.
4. **Quantum Computing:** While still in its early stages, quantum computing has the potential to break current encryption methods, posing a significant cybersecurity threat. The United States passed the Quantum Computing Cybersecurity Preparedness Act in December 2022, codifying into law a measure aimed at securing federal government systems and data against the quantum-enabled cyberattacks that many expect will happen as quantum computing matures.

Law Enforcement Challenges

Jurisdiction Issues in Cyberspace

Jurisdiction gives power to the appropriate court to hear a case and declare a judgment. In cybercrime instances, the victim and the accused are generally from different countries, and hence deciding which cyber jurisdiction will prevail is conflicting. The internet as stated earlier has no boundaries; thus, no specific jurisdiction in cyberspace can be titled over its use. A user is free to access whatever he wishes to and from wherever he wishes to. Till the time a user's online activity is legal and not violative of any law, till then there is no issue. However, when such actions become illegal and criminal, jurisdiction has a crucial role to play.

Types of Cyberspace jurisdiction

There are three types of cyber jurisdiction recognized in international law, namely-

- **Personal Jurisdiction** – It is a type of jurisdiction where the court can pass judgments on particular parties and persons. In the case of Pennoyer v. Neff, The Supreme Court of the US observed that the Due process enshrined in the constitution of the US constrains the personal jurisdiction upon its implication on the non-resident, hence there is no direct jurisdiction on the non-residents. However, this restraint was curbed by the minimum contact theory which allowed the jurisdiction over the non-residents as well.
- **Subject-matter jurisdiction** – It is a type of jurisdiction where the court can hear and decide specific cases that include a particular subject matter. If the specific subject matter is of one court but the plaintiff had sued in any other court then the plea will be rejected and the plaintiff will have to file the case in the court which is related to that matter. For instance, a complaint regarding a consumer good should be filed in the district consumer forum rather than district court as district consumer forums specifically look at consumer-related cases. In the same manner, all environmental-related cases are tried in NGT rather than a district court.
- **Pecuniary Jurisdiction** – This type of jurisdiction mainly deals with monetary matters. The value of the suit should not exceed the pecuniary jurisdiction. There are various limits set for a court that can try a case of a certain value beyond which it is tried in different courts.

Encryption and Anonymity as Obstacles

Cybercriminals use anonymity networks to encrypt (i.e. block access) traffic and hide Internet Protocol address (or IP address), "a unique identifier assigned to a computer [or other Internet-connected digital device] by the Internet service provider when it connects to the Internet" (Maras, 2014, p. 385), to conceal their Internet activities and locations. Well-known examples of anonymity networks are Tor, Freenet, and the Invisible Internet Project (known as I2P).

Attribution is another obstacle encountered during cybercrime investigations. Attribution is the determination of who and/or what is responsible for the cybercrime. This process seeks to attribute the cybercrime to a particular digital device, user of the device, and/or others responsible for the cybercrime (e.g., if the cybercrime is state-sponsored or directed) (Lin, 2016). The use of anonymity-enhancing tools can make the identification of the devices and/or persons responsible for the cybercrime difficult.

International Cooperation in Investigations

International cooperation depends on states' abilities to process requests for evidence in a manner that ensures the admissibility of the evidence in court. To achieve this, qualified cybercrime professionals are needed to ensure that evidence is obtained according to national rules of evidence and criminal procedure. These professionals, however, are short in supply. Countries all over the world suffer from a deficit in national capacity to deal with cybercrime.

This deficit in national capacity is the result of a lack of human, financial, and technical resources (UNODC, 2013). First, many countries do not have the quantity and quality of personnel needed to conduct cybercrime investigations as well as prosecute cybercriminals and handle international cooperation requests on cybercrime matters. Second, countries may lack the financial resources needed to recruit, hire, and keep qualified personnel, and provide frequent and up-to-date training for cybercrime investigators and other related professionals. Third, countries lack the necessary facilities to analyse digital evidence and lack the funds needed to purchase the necessary equipment and digital forensics tools to adequately conduct cybercrime investigations.

To deal with the deficit in national capacity, partnerships have been and continue to be developed with national, regional, and international organizations (e.g., the US Department of Justice, Organization of American States and the International Telecommunications Union) as well as private companies, to provide countries in need with financial, human, and technical cybercrime assistance, and support countries' efforts to develop their national capacity to deal with cybercrime.

Under the United Nations General Assembly Resolution 65/230 , the United Nations Commission on Cyber Prevention and Criminal Justice Resolution 22/7 Strengthening international cooperation to combat cybercrime and the United Nations Commission on Cyber Prevention and Criminal Justice Resolution 22/8 Promoting technical assistance and capacity-building to strengthen national measures and international cooperation against cybercrime, UNODC has a mandate to assist states in dealing with cybercrime by facilitating technical training in capacity-building, and implementing cybercrime prevention and education programmes, and awareness campaigns. These training, programmes and campaigns are particularly important as they provide long-term solutions to the current deficit in national capacity, by providing the knowledge, skills, and abilities needed to conduct cybercrime investigations.

Legal Frameworks and International Cooperation

National cybercrime laws

Many countries have enacted comprehensive cybercrime laws to address the challenges posed by digital criminal activities. For instance, the United States has the Computer Fraud and Abuse Act (CFAA), the Digital Millennium Copyright Act (DMCA), and the Electronic Communications Privacy Act (ECPA). The United Kingdom has the Computer Misuse Act (CMA), and India has the Information Technology Act (IT Act).

International conventions (e.g., Budapest Convention)

Budapest Convention: Primarily known as the Council of Europe Convention on Cybercrime, the Budapest Convention or the Convention on Cybercrime is the world's first international treaty designed to focus on increasing cybercrime. It came into the picture in 2001 and entered into force on July 1, 2004. The treaty had three prime objectives, including the improvement in investigative techniques, increase in cooperation among nations, and lastly, harmonising national laws. Apart from these, the participating countries needed to embrace legislation outlawing specified cyber-related crimes along with several definite evidence-gathering rules. The Council of Europe drew it in Strasbourg, France, and 64 countries that endorsed the Budapest Convention on cybercrime. These countries include Canada, Japan, the Philippines, South Africa, the United States, and others.

Other Conventions: Other relevant international conventions include the Council of Europe Convention on Cybercrime, the Central American Agreement against Cybercrime, and the African Union Convention on Cybercrime. Extradition and mutual legal assistance

Mutual legal assistance in criminal matters is a process by which States seek and provide assistance in gathering evidence for use in criminal cases. Extradition is the formal process whereby a State requests the enforced return of a person accused or convicted of a crime to stand trial or serve a sentence in the requesting State.

Role of INTERPOL and other international bodies

- **INTERPOL:** INTERPOL, with its global reach, plays a vital role in building cross-sector partnerships and enabling international law enforcement cooperation. INTERPOL coordinates law enforcement operations and delivers secure data-sharing platforms, analysis and training to reduce cyber threats. By increasing the capacity of the member countries to prevent, detect, investigate and disrupt cybercrimes, INTERPOL helps protect communities for a safer world.
- **UNODC:** The United Nations Office on Drugs and Crime (UNODC) is actively involved in addressing cybercrime, particularly concerning cyber-enabled drug trafficking and transnational organized crime. UNODC draws upon its specialised expertise on criminal justice systems response to provide technical assistance in capacity building, normative assistance, prevention and awareness raising, cooperation, and research and analysis on cybercrime trends. This expertise is delivered through a holistic programmatic approach: capacity building/technical assistance, cooperation, and normative assistance/legal framework.

- **Council of Europe:** The Council of Europe, through its Global Action Against Terrorism (GLOBACT) initiative, supports member states in combating cybercrime and enhancing international cooperation.
- **Other Organizations:** Other relevant international organizations include the Organization for Security and Cooperation in Europe (OSCE), the Commonwealth Telecommunications Organization (CTO), and the Internet Corporation for Assigned Names and Numbers (ICANN).

Digital Forensics and Investigation Techniques

Tools and methods for dark web investigations

I. **SL Crimewall:** With access to more than 500 open sources and 1700 search methods, Crimewall allows investigators to thoroughly scan and analyse both the Surface and the Dark Web to deanonymize suspects and get a complete picture of the investigation.

II. **DarkOwl Vision:** With the robust scanning functionality, users can monitor, browse, and stream content in near real-time from the Deep Web, darknet, and authenticated chat platforms.

METHODS:-

1. **Regular Surveillance and Prompt Action:** Consistent and regular monitoring of dark web activities helps in identifying potential threats and breaches early. Once a threat is identified, prompt action should be taken to mitigate any potential harm. This could mean securing compromised accounts, addressing vulnerabilities, or strengthening security measures.
2. **Collaboration and Information Sharing:** Collaborating with other organizations and cybersecurity researchers can provide broader visibility into cyber threats. Sharing threat intelligence can help to uncover larger criminal networks, leading to more effective preventive measures.
3. **Employee Education and Training:** Employees often are the first line of defence against cyber risks. With regular training, employees can better understand the risks associated with the cyber-threat landscape and encourage safe online practices. An informed team can significantly reduce the chances of internal breaches.

Cryptocurrency tracing and analysis

Cryptocurrencies, often used to facilitate illicit activities, leave a digital trail on the blockchain. Analyzing this trail can help uncover financial networks and identify key players involved in drug trafficking and other crimes. They can provide valuable evidence for law enforcement investigations, such as linking individuals to specific crimes or demonstrating the flow of funds.

Social engineering and OSINT in cybercrime investigations

Social Engineering: Social engineering requires the victim's active participation by employing their manipulation mastering techniques with an end goal of having the victim volunteer information important to himself or perform actions beneficial to the attacker. Permissible social engineering methods may be utilized by governmental organizations to obtain the required data about online criminals.

Open-Source Intelligence (OSINT): OSINT is intelligence based on collected information that is available to the public. Law enforcement agencies are also able to use OSINT to obtain details about various cases of individuals and organizations who engage in or support cybercrime. This technique is important in the process of studying crimes, especially those related to the internet, and mainly the dark net. The combination of these approaches can substantially increase the efficiency and the validity of the investigations for countering malicious activities.

Prevention and Awareness

Cybersecurity education and training

Cybercrime requires a multifaceted response combining education, laws, social awareness, training of law enforcement agencies, and the cooperation of Internet intermediaries, among 7 others. Accordingly, the deficits in national capacity need to be filled by educating current and next generations of professionals and opening up cybercrime and cybersecurity education to professionals outside of the fields of criminal justice, law, and computer science. The current deficit exists because of a lack of multidisciplinary focus on cybercrime and cybersecurity. To fill this void, the Cybercrime Module Series utilizes a multidisciplinary approach to analyse core cybercrime issues, cybersecurity strategies and measures, digital evidence, digital forensics, cybercrime laws, and investigative practices.

. Balancing security and privacy rights

The increasing need for security in the digital age often clashes with individuals' rights to privacy. This tension is particularly acute in the context of combating cybercrime and terrorism.

Proportionality: Security measures should be proportionate to the threat they seek to address.

Necessity: Surveillance and other security measures should be necessary to achieve a legitimate aim.

Public-private partnerships in cybercrime prevention

Public-private partnerships can facilitate the sharing of threat intelligence and best practices between the public and private sectors. Governments and businesses can collaborate on joint initiatives, such as cybersecurity exercises and research projects.

Rehabilitation and Deterrence Programs

- **Rehabilitation:** To ensure that cybercrime is not repeated, rehabilitation programs are designed to help the offenders in changing their ways. Such programs may consist of education, counselling, and job training. It has been outlined above, that among cybercriminals, recidivism can also be reduced through rehabilitation programs. For instance, the RAND Corporation conducted research and found that those who participated in a cybercrime rehabilitation program had a lower rate of recidivism than one of the synthetic reference groups.
- **Deterrence:** Deterrence involves the measures taken to prevent individuals from crime in different forms including cybercrime. This can be done by a combination of law enforcement, raising public security awareness, and building appropriate cyber defences.

Money laundering through cryptocurrencies

Money laundering using cryptocurrencies follows the general pattern of placement-layering-integration but with some specific features:

- Cryptocurrencies are anonymous at their point of creation therefore the placement stage of the money laundering process is often absent.

- It only takes a few seconds to create an account (“address”) and this is free of cost. It is only possible to use each account twice: to receive money and then transfer it elsewhere.
- It is possible to create a large money laundering scheme with thousands of transfers at a low cost and to execute it using a computer script.
- Due to rapid increases in exchange rates, with some cryptocurrencies showing 10,000% growth, it is very easy to justify unexpected wealth through cryptocurrencies.

Ethical and Privacy Considerations

Balancing Security and Privacy Rights

The French Ministry of Justice and the United Nations Office on Drugs and Crime (UNODC), within Project Justitia, organized a study visit to the European Court of Human Rights (ECtHR) and the French judicial institutions, for judges from all Western Balkans jurisdictions. The key objective of this visit was to provide insight into the French judicial system's approach to balancing human rights with security challenges. Judges from the Western Balkans gained firsthand knowledge of how France manages this balance while confronting issues like organized crime, terrorism, and the trafficking of firearms and drugs. Interactive sessions with French judges, prosecutors, and law enforcement officers, alongside visits to a police detention centre, a police control centre for emergency response, and courtrooms, offered a comprehensive view of the French legal system's operational dynamics. They saw how theoretical knowledge and practical application come together in fighting crime effectively, yet in a way that upholds European human rights standards, especially focusing on maintaining a fair balance (the principle of proportionality).

Encryption debates and backdoor controversies

Encryption refers to a cryptographic technique used to disguise data such that the data becomes seemingly random and nonsensical text, thus becoming unreadable to anyone without an appropriate key for decrypting the encrypted text. Due to this fact, encryption is highly important for protecting sensitive information, such as financial transactions, personal communications, or even national security secrets.

A backdoor is an unknown weakness or hidden entry in a system through which illegal access can be achieved. In the context of encryption, a backdoor could be interpreted as the way through which a law enforcement agency would subvert the encryption so that they could decrypt messages from users without the knowledge or consent of the user.

Human Rights in the Digital Age

1. Privacy: The right to privacy in the digital age means protecting people's data from spying unauthorized gathering, and abuse. As digital footprints grow, data leaks and tracking create big privacy risks. Laws like Europe's GDPR aim to keep people's data safe from misuse by companies and governments.
2. Freedom of Expression: In today's digital world, freedom of expression lets people share their thoughts, info, and beliefs on digital platforms. But issues come up with government control of offensive speech, and false info online. Finding a balance between freedom and responsible speech is key to upholding this right in our connected digital world.
3. Access to Information: This right makes sure people have equal access to digital resources, including the Internet, which is vital for learning, health, and job opportunities. However digital gaps still keep many from this access, especially in developing areas limiting their ability to exercise their rights in a digital society.
4. Equality and Non-Discrimination: In the digital age ensuring equality means stopping unfair treatment in access to tech and digital services. Groups on the margins, including women ethnic minorities, and rural populations often face roadblocks to

accessing online resources. This makes social inequalities and digital exclusion worse. We need inclusive policies and programs to promote fairness.

5. Cybersecurity: As we rely more on digital systems, cybersecurity plays a key role in keeping people safe from online crime, harassment, and spying. When hackers strike, they can put people at risk, invade their privacy, and even shake up governments. Countries around the world are working together to beef up their cyber defences. The goal is to create a digital world that's safer for everyone to use.

Case Studies

Major Dark Web Marketplace Takedowns

1. **Silk Road:** Silk Road was an infamous black market website that was created in 2011 by Ross Ulbricht to sell and buy drugs and other illegal products. It was based on the Tor network and used Bitcoins for payments to maintain the anonymity of the users. It had a feedback system to ensure that users trusted each other and the marketplace also supported anonymous transactions which made it suitable for the sale of illicit products. In October 2013, the FBI conducted Operation DarkNet, which resulted in the arrest of Ulbricht and the servers of Silk Road. Police seized approximately 26,000 bitcoins (worth approximately $3. 6 million at the time). Ulbricht was convicted of charges such as drug trafficking, money laundering, and computer hacking. He was given life imprisonment without the possibility of parole in February 2015. This takedown proved that large dark web markets can be shut down by the police and became a precedent for further actions against such platforms.
2. **AlphaBay:** AlphaBay, which started in 2014, was one of the largest dark web marketplaces for drugs, stolen information, and counterfeit products. It used Tor for anonymity and cryptocurrencies for payments. AlphaBay was a well-structured marketplace with an efficient feedback system and a vast stock, which made it one of the leading markets in the black market. AlphaBay was shut down in July 2017 by the FBI and other law enforcement agencies with the help of Europol, and its server was seized together with the site's operator, Alexandre Cazes, who committed suicide before the police could apprehend him. Police arrested 17 people and confiscated more than $23 million in cryptocurrencies and prevented large-scale drug trafficking. The shutdown of AlphaBay affected many criminal activities but also created new dark web markets, which proves the difficulties of eliminating the dark web markets.
3. **Hansa Market:** Hansa Market, another dark web marketplace, was active alongside Silk Road and AlphaBay and sold drugs and counterfeit goods. It was famous for its clear navigation and the vast number of products it offered. The structure of the marketplace was similar to other dark web sites with a feedback system to ensure trust between the buyers and sellers. Hansa Market was shut down in July 2017 during Operation Bayonet, but the police took over the site and ran it for several weeks before shutting it down. This enabled authorities to gather a lot of information about the users. The operation resulted in the apprehension of many people associated with the marketplace and yielded information for future investigations. One of the strategies employed was the undercover operations to obtain evidence, which showed the innovative approach of dark web policing.

Significant Cybercrime Investigations and Prosecutions

1. **Operation Disruptor:** Operation Disruptor began in September 2020 and focused on dismantling cyber-enabled drug trafficking groups on the dark web. Initiated by the DEA, FBI, and other counterparts, the operation sought to dismantle large-scale drug trafficking networks. The study was conducted on the dark web markets and people who are involved in the sale of illicit drugs. The operation led to more than 179 arrests and the confiscation of $6. 5 million in cash and cryptocurrencies.

2. **Emotet Takedown:** Emotet was a malware network used for distributing ransomware and banking malware. It has infected millions of computers worldwide, making it a significant threat in the cybercrime landscape. The Emotet botnet spread through phishing emails with malicious attachments, leading to widespread infections. In January 2021, Operation Ladybird, led by Europol and national authorities, dismantled the Emotet infrastructure. The operation involved seizing servers and disrupting the botnet's operations. The takedown neutralized one of the largest malware networks, significantly reducing Emotet-related attacks. The success of the Emotet takedown demonstrated the effectiveness of international cooperation and advanced investigative techniques in addressing malware threats.

Lessons Learned from Successful Operations

1. **Importance of International Collaboration:** Major dark web takedowns and cybercrime investigations require extensive international cooperation. Effective responses depend on coordination among multiple countries and agencies.
2. **Adaptability and Innovation:** Cybercriminals continuously evolve their methods, necessitating adaptable and innovative strategies from law enforcement agencies.
3. **Undercover Operations:** Undercover operations can provide valuable intelligence and facilitate the dismantling of dark web marketplaces. Careful execution is essential to avoid compromising investigations.
4. **Public-Private Partnerships:** Collaborations between law enforcement and private sector entities enhance the ability to combat cybercrime. These partnerships are crucial for resource sharing and expertise.

Emerging Trends and Future Challenges

Artificial Intelligence in cybercrime and crime-fighting

AI will reshape many cybersecurity roles so that practitioners can focus their time and attention on what humans do best—devising strategy, setting policy, thinking creatively, addressing the human element and motives of attackers, applying negotiation tactics, and monitoring the operation of AI itself while applying ethical standards.

Productivity will increase, and the main enemy of cybersecurity—complexity—will gradually fall as the speed, completeness and sophistication of AI will permit more holistic prevention, detection, response and recovery.

Quantum computing and its implications for cybersecurity

Work on quantum computing that is currently housed in research universities, government offices and major scientific companies, is progressing rapidly. This advancement raises concerns about its potential to break modern cryptography—much like the trio of examples mentioned at the beginning—rendering current data encryption methods obsolete. The need for new cryptography to combat these powerful machines is imminent. Traditional encryption methods, like RSA and elliptic curves, could be easily solved by quantum computers, significantly reducing the time to break security keys from years to hours. Experts believe that quantum computers capable of breaking current codes could be more than a decade away, but the threat necessitates immediate action in cybersecurity planning.

The Role of the Private Sector

Tech companies' responsibilities in combating cybercrime

Since data breaches also cost companies a significant amount of money in terms of reputation, lost revenue, and potential lawsuits, companies are being more proactive when it comes to cyber-attacks. To safeguard data, corporations now invest in various security technologies to prevent future assaults.

For example, many corporations now use biometric authentication (i.e., fingerprints, and eye scans) to verify identities, and Apple has been a leader in offering fingerprint biometric authentication to its consumers since 2013.

Additionally, banks such as The Royal Bank of Scotland utilize behavioral biometric technology. In this instance, biometric software analyses a user's behavior to develop a "behaviour profile."

It learns activities like how someone holds the phone, whether they type with one or two hands, and how they scroll or switch between screens.

Cybersecurity industry and innovation

Innovation within the cybersecurity theme is just as critical as the cybersecurity itself. This is due in part to the rampant technological change taking place across both sides of the cybersecurity aisle – the businesses and organizations deploying cybersecurity to protect their data, networks, etc. and the threat actors who are looking to steal, destroy, and wreak havoc on those systems being protected. What's happening though is that the threat actors are beginning to use more advanced methods and technologies, making it paramount for cybersecurity firms and cybersecurity technology to keep up with this change. How? Through innovation. According to the World Economic Forum in The Global Risk Report 2021, "Business, government, and household cybersecurity infrastructure and/or measures are outstripped or rendered obsolete by increasingly sophisticated and frequent cyber-crimes, resulting in economic disruption, financial loss, geopolitical tensions and/or social instability." 8 Cybersecurity must innovate to keep up with the sophistication and frequency of cybercrimes.

Policy Recommendations

Strengthening International Legal Frameworks

- **Harmonization of Laws:** Countries should strive to align their domestic cybercrime laws to those of other countries to enhance cooperation. For example, the Council of Europe's Cybercrime Convention is an example of an international treaty that outlines the guidelines that the member countries are supposed to follow.
- **Update Existing Laws:** Laws must be reviewed from time to time to meet new challenges and new technologies. For instance, the United States Computer Fraud and Abuse Act has been reviewed severally to accommodate the changes in the computer environment.
- **International Conventions:** There is a need to enhance the existing international treaties like the Budapest Convention by extending it to other types of cybercrime activities. For instance, the Convention could be amended to include new threats such as deep fakes and AI-enabled attacks.

Enhancing cross-border cooperation

- **Information Sharing:** Governments should set up ways and means through which information and intelligence on cybercrime can be shared. This could include the establishment of specific channels of information sharing, standardization of data formats, and secure means of communication.
- **Joint Investigations:** Police forces should conduct coordinated operations to address the issue of transnational cybercrime groups. This can include the sharing of resources, knowledge and evidence.
- **Extradition Treaties:** Governments should enhance and modernize extradition agreements to enhance the transfer of suspects across borders. This means that there should be well-defined procedures on how extradition is sought and granted and how legal or procedural hitches are handled.

Investing in cybercrime-fighting capabilities

Investing in a cybersecurity ETF such as CIBR helps to reduce risk through diversification.

The cybersecurity industry is growing at a compound annual growth rate of 8.9%. Because many of the companies that are included in this ETF are some of the top brands in the cybersecurity industry, it means that many of them will most likely thrive as the demand for cybersecurity solutions continues to increase over the next few years. This is especially true considering the fact that the COVID-19 pandemic accelerated the switch to remote work.

CIBR has roughly doubled in price over the last 4-5 years, moving from roughly $20 to about $40, even reaching as high as $56 at one point. As far as cybersecurity ETFs go, this is one of the most promising, and it is one that you should strongly consider if you are thinking about investing in cybersecurity.

Balancing security measures with digital rights

Online privacy in the digital age requires a careful balance between security and personal freedoms. While legal frameworks and technological measures are vital, individuals must

also take proactive steps to safeguard their privacy. By understanding the complexities of online privacy and adopting best practices,

The Way Forward

Developing a global strategy against cybercrime

- Enhanced processes for obtaining information from member countries and private sector partners for the proactive development of actionable intelligence.
- Prevention of cybercrime to better protect communities through coordinated law enforcement action and raising public awareness by collaborating with external partners.
- Delivery of capabilities development and the implementation of capacity building projects to increase member countries' ability to fight cybercrime.
- Development of INTERPOL's position on cyber policy and an international convention on cybercrime, reflecting the global law enforcement perspective.

Fostering a culture of cybersecurity

A strong cybersecurity culture ensures that security practices are integrated into everyday operations. It reduces the risk of security breaches and promotes a proactive approach to information security. Moreover, a cyber-aware workforce is better equipped to handle cyber threats and maintain a robust security posture.

Conclusion

Recap of Key Points

1. **Overview of the Dark Web:** The dark web is a subset of the internet, accessible only through specific browsers like Tor and I2P. It provides anonymity for users but is also a haven for illegal activities.
2. **Impact of Cybercrime:** Cybercrime has surged dramatically in the past decade, with global economic losses reaching billions annually. High-profile attacks and data breaches have highlighted the severity of the problem.
3. **Technological Enablers of Cybercrime:** Anonymity technologies (e.g., Tor, I2P) and encryption play a crucial role in facilitating illicit activities on the dark web. Emerging technologies such as AI, quantum computing, and IoT are both advancing cybercriminal capabilities and shaping new cybersecurity strategies.
4. **Current Countermeasures:** International cooperation, through frameworks like the Budapest Convention and collaboration with organizations such as INTERPOL, has been instrumental in combating cybercrime.
5. **Legal and Regulatory Frameworks:** National and international legal frameworks are evolving to address the challenges of cybercrime, including updated cybercrime laws and cross-border legal agreements.

   Efforts to balance privacy rights with effective cybersecurity measures are ongoing, reflecting the complex nature of regulating digital activities.
6. **Challenges in Law Enforcement:** Jurisdictional issues, the difficulty of collecting and preserving digital evidence, and the use of encryption and anonymity by cybercriminals present significant obstacles.
7. **Prevention and Awareness Initiatives:** Public-private partnerships and cybersecurity education are critical in preventing cybercrime and improving public awareness.

   Early warning systems, threat intelligence sharing, and rehabilitation programs are essential components of a comprehensive prevention strategy.
8. **Ethical and Privacy Considerations:** Striking a balance between enhancing security and protecting privacy remains a central issue. Controversies over mass surveillance, encryption backdoors, and digital rights highlight the need for careful policy considerations.
9. **Emerging Trends:** AI is being utilized both to perpetrate and combat cybercrime. Its role in automating attacks and defence mechanisms is a growing concern.

   Quantum computing could potentially break current encryption methods, necessitating research into quantum-resistant technologies.

   IoT devices introduce new vulnerabilities due to often inadequate security measures, while deep fakes and synthetic media pose risks related to misinformation and fraud.
10. **Private Sector's Role:** Technology companies play a crucial role in combating cybercrime by developing innovative security solutions and collaborating with law enforcement.

Call to Action for Delegates

Delegates, as we gather to confront the escalating threat of cybercrime and the digital drug trade, your role is more critical than ever. The global nature of these issues demands strong international cooperation. It is vital to build partnerships across borders and industries, ensuring that nations work together to create unified responses.

Technology must be at the heart of this fight. By promoting innovative tools like blockchain and artificial intelligence, we can disrupt criminal networks and track illegal activities with greater precision. At the same time, it is essential to advocate for legal frameworks that hold criminals accountable while respecting human rights and privacy.

As future leaders, we cannot forget the importance of preventive education. Empowering young people and vulnerable communities with knowledge will reduce their risk of falling prey to cybercrime or the digital drug trade. We must also focus on long-term solutions that address the underlying causes, such as poverty and inequality, and support rehabilitation efforts.

The challenge before us is immense, but with determination and collaboration, we can make the digital world safer for all. Your actions in this committee will shape policies that protect people and dismantle criminal networks. Let’s work together to build a future where the dark web no longer threatens our security.

Additional Resources

Glossary of Cybercrime and Dark Web Terms

1. **Dark Web:** A portion of the internet is not indexed by traditional search engines, requiring specific software (e.g., Tor) to access. Often associated with illicit activities due to their anonymity.
2. **Cybercrime:** Criminal activities conducted via computers or the internet, including hacking, identity theft, and online fraud.
3. **Tor (The Onion Router):** A network that anonymizes users' internet traffic by routing it through multiple servers, making it difficult to trace.
4. **I2P (Invisible Internet Project):** An anonymous network layer that allows for secure and private communication over the internet.
5. **Ransomware:** Malicious software that encrypts a victim's data, demanding payment for decryption.
6. **Cryptocurrency:** Digital or virtual currencies that use cryptography for security and operate independently of a central authority. Commonly used in dark web transactions.
7. **Encryption:** The process of converting information into a secure format that is unreadable without a decryption key.
8. **Deep Fakes:** AI-generated synthetic media that can create realistic but fake images, audio, or video.
9. **Blockchain:** A decentralized ledger technology that records transactions across many computers securely and transparently.
10. **Digital Forensics:** The practice of collecting, analyzing, and preserving digital evidence in a legally admissible manner.
11. **Phishing:** A fraudulent attempt to obtain sensitive information by disguising oneself as a trustworthy entity via electronic communication.
12. **Zero-Day Exploit:** A vulnerability in software that is unknown to the software vendor and, therefore, has no available patch or fix, making it a prime target for exploitation by cybercriminals.

Recommended Reading and Research Links

- **INTERPOL Cybercrime Reports**
- **Europol Cybercrime Reports**
- **CERT-In (Indian Computer Emergency Response Team)**
- **National Cyber Security Coordinator (India)**
- **Cybersecurity Ventures:**
- **McAfee Labs:**

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