



Council of the European Union
General Secretariat

Brussels, 13 September 2018

WK 9814/2018 REV 1

LIMITE

CYBER
COPEN
JAI
DROIPEN
ENFOPOL
TELECOM
DAPIX
EJUSTICE
MI

WORKING PAPER

This is a paper intended for a specific community of recipients. Handling and further distribution are under the sole responsibility of community members.

WORKING DOCUMENT

From:	General Secretariat of the Council
To:	Working Party on Judicial Cooperation in Criminal Matters (COPEN) (E-evidence)
Subject:	Definition of service providers - Compilation of comments

Delegations will find in Annex comments from Member States on the definition of 'service providers' on the above mentioned proposals, as requested in WK 9012/2018, now including contributions from EE and FI.

A contribution from Europol is also attached.

ESTONIA

E-evidence proposal

Definition of service providers

Comments from Estonia

Although we don't have any specific text proposals yet, we are of the opinion that the definitions should be as precise as possible. We need to ensure that there is legal clarity as well as foreseeability. There cannot be different interpretation of the text, otherwise problems at practical and operational level will arise. Both law enforcement authorities and private sector entities need to have a clear understanding which service providers would be included in the scope and which not. Law enforcement must know which providers are covered and to whom legally binding requests/orders/certificates can be sent. Private sector and service providers must also know whether they are covered or not, because there has to be foreseeability and service providers need to have clear expectations concerning their possible rights and obligations.

As regards the scope of the proposal and the definition of the service provider, we think that it should cover at least the following services and providers.

Service providers that offer different platforms and services such as:

Apple, including Mail, iTunes, AppStore, iCloud, Maps, Apple Pay, Health, Home

Amazon, including its hosting services, Amazon online shop, marketplace, Kindle, Alexa

Google, including Google search engine, Chrome, Gmail, Docs, Drive, Google Maps

Microsoft, including Outlook, Office 365, Azure

Yahoo!/Oath, Mail, Drive

Online marketplaces such as Amazon, eBay

Social networking and media sharing sites such as Facebook, Instagram, Snapchat, LinkedIn, Twitter, 4chan, Youtube, Vimeo

Communication and messaging services such as Skype, Whatsapp, Signal, Telegram, Viber

Booking and sharing economy services such as Booking.com, Hotels.com, Airbnb, UBER

Financial and payment services such as PayPal, virtual currencies and cryptocurrencies service providers and exchanges such as localbitcoins, bittrex, bitfinex

Sports trackers, medical devices providers such as Endomondo, Polar, Garmin

Online gaming services such as Microsoft Xbox, Sony Playstation Network

Request for contributions on definition of service providers

The Czech Republic contribution

Rationale

On request of the Presidency for written contributions and national expert input on definition of service providers in the draft Regulation on European Production and Preservation Orders for electronic evidence in criminal matters and in the draft Directive laying down harmonised rules on the appointment of legal representatives for the purpose of gathering evidence in criminal proceedings, the Czech Republic shares its opinion.

In general, we welcome that both proposals contain the same draft definition. We agree that the definitions have to stay the same in the Regulation and in the Directive, as this is the very prerequisite of legal certainty.

Regarding the definition of the information society services, which is contained in Art. 2 para 3 (b) of the draft Regulation and in Art. 2 para 2 (b) of the draft Directive, we are of the opinion that particular services should be defined more precisely. We are convinced that such a clarification would be beneficial for both competent authorities and the providers that will be addressees of European production or preservation orders.

For that purpose the Czech Republic suggests to modify the definition contained in Art. 2 para 3 (b) of the draft Regulation and in Art. 2 para 2 (b) of the draft Directive as follows: use more concise, general definition of information society services and define particular services in new paragraphs. Only those particularly defined information society services would be addressees of the legislation. In our contribution, we work with those services mentioned in the drafts: service for which the storage of data is a defining component of the services, i.e. cloud computing service; social networks; online marketplaces. We found an inspiration in the Directive (EU) 2016/1148 of the EP and of the Council concerning measures for a high common level of security of network and information systems across the Union¹, which contains (Art. 4) definition usable for the purpose of those drafts (cloud computing service and online marketplace). As social network is not defined in any EU legislative text yet, we propose simple definition which is open to further clarification. We are of the opinion that if such definitions would be adopted, there is no need for explicit exclusion of certain services, as the scope would be very clear.

In all cases, precision of definition of information society services would be necessary, as according to the Czech Republic there is no ratio to name only few examples of hosting service providers, if all the named services providers fall under the same category (all the services in Art. 2 para 3 (b) of the draft Regulation and in Art. 2 para 2 (b) of the draft Directive are hosting services providers).

For the text proposal we use draft Directive, which might be used for the draft Regulation in parallel. If this proposal is accepted, the changes described below should be also reflected in relevant recitals.

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016L1148&qid=1534841925229&from=CS>.

Text proposal

Proposal for a Directive laying down harmonised rules on the appointment of legal representatives for the purpose of gathering evidence in criminal proceedings

Article 2 Definitions

For the purpose of this Directive, the following definitions apply:

- (1) 'legal representative' means a legal or natural person, designated in writing by a service provider for the purpose of Articles 1(1), 3(1), 3(2) and 3(3);
- (2) 'service provider' means any natural or legal person that provides one or more of the following categories of services:
 - (a) electronic communications service as defined in Article 2(4) of [Directive establishing the European Electronic Communications Code];
 - (b) information society services as defined in point (b) of Article 1(1) of Directive (EU) 2015/1535 of the European Parliament and of the Council², **which is of a type listed below for which the storage of data is a defining component of the service provided to the user, including social networks, online marketplaces facilitating transactions between their users, and other hosting service providers;**
 - (1) cloud computing service means an information society service that enables access to a scalable and elastic pool of shareable computing resources;
 - (2) social network means an information society service that allows the registered members to create a profile, share information, data and communicate;
 - (3) online marketplace means an information society service that allows consumers and/or traders as respectively defined in point (a) and in point (b) of Article 4(1) of Directive 2013/11/EU of the European Parliament and of the Council³ to conclude online sales or service contracts with traders either on the online marketplaces' website or on a trader's website that uses computing services provided by the online marketplace;
 - (c) internet domain name and IP numbering services such as IP address providers, domain name registries, domain name registrars and related privacy and proxy services;

² [Directive \(EU\) 2015/1535](#) of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (OJ L 241, 17.9.2015, p. 1).

³ Directive 2013/11/EU of the European Parliament and of the Council of 21 May on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/ES (Directive on consumer ADR) (OJ L 165, 16. 6.2 013, p. 63).

FINLAND

FI Comments on the definition of service provider

Proposals COM(2018) 225 FINAL and COM(2018) 226 FINAL

We thank the Presidency for your speedy start on this file and for the opportunity to provide some written comments on the proposed definition of service provider. We'll need to start by stressing that our views expressed here are only preliminary as our parliament is still analyzing the proposals and it will be up to them to confirm our final position. All in all, these proposals are rather delicate in nature and therefore member states need enough time to first carefully form their national positions and then to react should there be new formulations or questions on the table in the future. Having said that, please find below some remarks from the Finnish delegation on the subject matter. We look forward to addressing all of these issues carefully at the working party level.

First, we are of the opinion that the question on the extent of the definition of service provider (ISP) very much depends on other questions in the proposals, especially on the question, which role is given to the companies in the cooperation as a whole. If, and quite the contrary than in the proposals, in the direct cooperation there were also a systematic role for the authorities of the member state of the service provider, the definition of the ISP's could be wider than otherwise since the role of the ISP's would be lighter than it is in the proposals and therefore it would be more realistic to assume that the ISP's could actually do well the tasks foreseen for them.

Second, the proposed definition of a service provider seems to be partly unclear and there are several questions that still have to be clarified on that subject matter. First of all, the definition seems to be rather wide, especially when taken into account the administrative burden to the ISP's, especially to the small and medium sized enterprises (SME). In the EU legislation there are several instruments where, in the scope, there is an exception made in relation to SME's. As an example, we refer to the exception made in the Article 16, paragraph 11 of the directive (EU) 2016/1148. We are of the opinion that it could be further considered also in these instruments which is the impact of the proposals to the SME's and whether this can be eased in one way or another.

Moreover, we are wondering whether the definition, as formulated in the proposals, could include some governmental players as well. The tasks that are formulated in the definition in the proposals are such that some of them may be handled by entities that are governmental by nature. We are therefore interested in hearing, whether the definition is only meant to cover private companies or could it be that also some governmental organisations could be included in the definition.

On the other hand, we have been wondering whether all the relevant ISP's would now be included in the subparagraph c of the definition, especially when talking about so called VPN services. What we mean here are the services where the ISP, while offering security and protection to its customers, also hides the real user of the traffic. Therefore, we have been thinking that it could clarify the situation if the subparagraph c would be amended as follows: "c) internet domain name and IP numbering services such as IP address providers, domain name registries, domain name registrars and related privacy, security, ~~and~~, proxy and VPN services".

To sum up, we are of the opinion that it is important to continue clarifying, what is meant by service provider in the proposals. Having said that, it seems obvious that the question on the proper extent of the definition very much depends on the role foreseen for the ISP's in the final regulation. We are therefore looking forward to continuing discussions on the definition and on the proposed instruments as a whole.

GERMANY

Comments by Germany on the definition of service providers (WK 9012/2018 INIT)

The Presidency has kindly invited the Member States to share their experiences and views on which types of service providers should be covered. In addition, MS are invited to indicate whether there is a need to explicitly exclude certain services, service providers or categories of services/service providers in order to provide legal certainty and clarity for stakeholders affected by the instruments.

The Presidency informed the Member States that concrete examples, i.e. naming a company (with the aim of creating a definition based on the types of providers in view of the replies), or naming more abstract categories/types of service providers with which the practitioners see a need to establish a direct cooperation, would be appreciated.

The Federal Republic of Germany thanks the Presidency for the opportunity to submit comments and would like to draw attention to the following points:

1. The Federal Republic of Germany generally supports the Commission's regulatory approach of giving the EPOC Regulation a broad scope in order to create an effective law enforcement instrument and prevent "safe harbors". However, Germany sees the need for **the operative part of the EPOC Regulation** to provide **greater clarity** in defining which providers are **not** supposed to fall within the EPOC Regulation's scope (one option here would be to formulate an exception clause along the lines of Article 1(5)(d) of the E-Commerce Directive 2000/31/EC or similar). These include the offerings of **law firms, engineering companies etc.** as listed in recital 16 of the EPOC Regulation. But they also include the relevant offerings of notaries, accountants, **medical practices, clergy, journalists** and **delegated representatives** in national or international parliaments and public authorities.

As an alternative or even in addition to removing professional activities which are specially protected by fundamental rights from the "provider" definition, it could/should be made clear in the operative part of the EPOC Regulation that it is not permissible to obtain data that are subject to the protection of interests predominantly arising from fundamental rights (in particular: the core area of the private conduct of life). This means that **Article 5 of the draft Regulation needs to be amended.**

2. From the German viewpoint, it remains unclear whether the EPOC Regulation's scope also covers service providers that are established exclusively on the territory of a single Member State and offer services exclusively on that territory (and when such "exclusive offerings" can be presumed). Whereas the Legal Representatives Directive contains the relevant provisions within the text (Article 1(4) 2nd sentence of the draft Directive), the EPOC Regulation only makes reference to this question in the recitals (e.g. Recital 15).
3. It appears to be important that the "provider" definition in the EPOC Regulation and the Legal Representatives Directive also (entirely) covers providers that offer **integrated business models**. From the viewpoint of German legal practice, there is still a need for discussion and possibly clarification as to whether this is in fact the case. For example, some large companies have **particular services** which are significant from a law enforcement perspective and which are clearly supposed to fall within the scope of the new EU legal instruments (the following comments serve to illustrate the point and are merely intended as examples):

- a. [Amazon] Web Services: As a conventional hosting provider, this particular service is obviously covered by the "provider" concept; but the EPOC Regulation needs to include clear provisions for subcontracted data processing service providers and their obligations to cooperate. It needs to be ensured that the liable party (in this case Amazon) can, if required, demand and obtain data from subcontracted data processing service providers.

- b. [Amazon] Marketplace: This particular service would be covered by the current “provider” definition only where the products are offered by private individuals or companies. If, however, the provider of the service is itself acting as the seller, this would not be covered by the “provider” definition because then no transaction would occur between two users. For this reason, the **limiting criterion of “facilitating transactions between their users”** should be **deleted**.
- c. [Amazon] Payments: In cases where a company’s payment service provider is headquartered in another (Member) State, requests for information issued by German law enforcement authorities are occasionally refused on the grounds that the other State’s national law does not permit such transfers of data. In order to find a solution and clarify this issue, online payment service providers should also be included as addressees of EPOCs.
4. Given the scope of the “provider” definition, it still appears unclear as to whether communication that occurs within the framework of a Massively Multiplayer Online Game (MMO) or another online gaming setting would be covered – this would be desirable from the law enforcement perspective. In the draft of the Directive establishing the European Electronic Communications Code, so-called ancillary services are explicitly excluded pursuant to Article 2(5). But do these services fall within the definition of “information society service provider”?

The question has practical relevance because cases are known in which communication of a criminally relevant nature was exchanged via such channels. It would be helpful for this question to be clarified.

LITHUANIA

In our view, categories of the service providers are quite clear and understandable, except the wording in para c) “related privacy and proxy services” which would require further explanation at least in the recital. I hope I will have more explanation during the meeting the next week.

NETHERLANDS

The draft Regulation on European Production and Preservation Orders and the draft Directive laying down harmonised rules on the appointment of legal representatives for the purpose of gathering evidence in criminal proceedings share the same definition of 'service provider'. At present that definition lacks legal clarity.

We underline that the definition used deviates significantly from the definition in the cybercrime convention (COE, ETS no. 185) which we see as the EU Acquis in this respect, since the Directives on attacks against information systems (2013/40/EU), on combating the sexual abuse and sexual exploitation of children and child pornography (2011/92/EU) do not have any further definition on service provider.

In the current draft Regulation and Directive no reference is made to the definition of service provider in the cybercrime convention. Instead references are made to the draft Directive establishing the European Electronic Communications Code, the Directive (EU) 2015/1535 on information society services and attention is drawn to “internet domain name and IP numbering services”. However the references to the draft directive and the directive do not give a more material grasp of the subject of service providers. They refer to rather abstract descriptions on services rendered.

The attraction of the definition of the cybercrime convention is it's use of key words to describe the activities that define a broad concept such as service provider. What stands out =

1. Entity (public, private or other)
2. Provides the ability to communicate
3. **And**, processes or stores computer data
4. to users, **And** on behalf of such communication service and users

These key words can also now serve to describe the concepts of electronic communications services, information society services and internet domain name and IP numbering services and may constitute the sought definition for the e-evidence regulation and directive.

The recitals of the Regulation and Directive should then give more information as does the explanatory report of the cybercrime convention .

Main messages in the recitals should be:

- service provider encompasses a broad category of persons and businesses / organizations that provide for
 - possibilities to communicate. For us, communication is still a very broad concept. In this respect we would like to use an extra key word such as interpersonal communications
 - processing and storing of data.
- a mere provider of content (such as a person who contracts with a web hosting company to host his web site) is not intended to be covered by this definition if such content provider does not also offer communication or related data processing services.
- The descriptions in the draft Directive establishing the European Electronic Communications Code, the Directive (EU) 2015/1535 on information society services match with this definition and are to be seen as more in depth information.
- The most illustrative extra information would be in the enumeration of sub categories of service with some real life examples. However with the caveat that the concrete examples will vary and change over time because of the quick and at this time unimaginable changes in ICT's and their use.

The enumeration may be derived from this table. NB; the examples come from a Netherlands perspective and practice. Dutch prosecution has experience with all of the categories and companies which are named as example. However the categories 1, 2 en 3 (a), (b), (d), (e) prove to be the most relevant at this time.

1. Telecommunication services	Traditional telco's , especially their internet (= access, e mail, VOIP, sms)	Like KPN, Tele2, Vodafone, etc; or Orange, DTE, etc, probably even Verizon
2. hosting providers	Webhosting, infrastructure, colocation services	Leaseweb, Serverius, XS4ALL, Worldstream
3. platforms	a. OTT, include voice and video calling, text messaging, video content delivery and social networking, and e-mail clients	Whatsapp, Telegram, Signal, Skype, FaceTime, Viber Facebook, Facebook Messenger, Snapchat, Instagram, hotmail, gmail. etc. YouTube, Netflix
	b. Online markets	eBay and Amazon Marketplace; <u>exclude webshops</u>
	c. sharing economy market places	Uber, AirBnB, Booking.com
	d. Payment services	intermediary payment service providers, IDEAL, PayPal; crypto exchangers and wallet providers; <u>not banks</u>
	e. Platform for location data, navigation apps such as satellite data.	WAZE, TOMTOM, Runkeeper, Google Maps
	f. Online game platforms/companies	King, Electronic Arts, Square Enix, Ubisoft etc.
	g. search engines	Google and Bing Search
	h. application distribution platforms	Apple store, Google Play
4. Domain names +IP services	Registries, registrars	RIPE, HostNet, TransIP, MijnDomein, Yourhosting, SIDN, verisign, godaddy

- We do plead to distinguish certain payment services from traditional banks and financial institutions.

Lastly, although not directly aimed at the contents of what service providers are, we raise once again our concerns because of the – compared to the bigger etch companies - considerable bigger administrative and financial impact of the regulation and directive on SME's, especially on start ups. Of course, this may as the commission already flagged be mitigated because of the market driven emergence of pooling facilities where SME's could join together to share the expertise and burden to react to EPOC's. In order to facilitate SME's even more we suggest to be more lenient in the time an SME that is genuinely willing to cooperate will have to produce the data ordered, e.g 25 days.

ROMANIA

Definition of service providers – request for contribution

- In our opinion the definition of "service providers" provided by art. 2 paragraph 3 b of the Regulation should be similar and as broad as the definition provided by the Convention on cybercrime¹.
- In addition, it could be amended in order to mention those situations that ARE NOT covered by the definition. For example:
 - a service is provided occasionally on a specific request;
 - the service acquired is not intended to provide further possibility to engage in a communication.

The Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (codification) provides **an indicative list of services not covered by the definition in Annex I.**

The Explanatory Report of the Convention on Cybercrime in paragraph 27 also gives an example not included in the definition of service provider, namely *"a mere provider of content (such as a person who contracts with a web hosting company to host his web site) if such content provider does not also offer communication or related data processing services"*.

¹ Article 1 - Definitions

For the purposes of this Convention:

c "service provider" means:

- i. any public or private entity that provides to users of its service the ability to communicate by means of a computer system, and
- ii. any other entity that processes or stores computer data on behalf of such communication service or users of such service.

Article 1 (c) - Service provider 26. The term "service provider" encompasses a broad category of persons that play a particular role with regard to communication or processing of data on computer systems (cf. also comments on Section 2). Under (i) of the definition, it is made clear that both public and private entities which provide users the ability to communicate with one another are covered.

Therefore, it is irrelevant whether the users form a closed group or whether the provider offers its services to the public, whether free of charge or for a fee. The closed group can be e.g. the employees of a private enterprise to whom the service is offered by a corporate network.

27. Under (ii) of the definition, it is made clear that the term "service provider" also extends to those entities that store or otherwise process data on behalf of the persons mentioned under (i). Further, the term includes those entities that store or otherwise process data on behalf of the users of the services of those mentioned under (i). For example, under this definition, a service provider includes both services that provide hosting and caching services as well as services that provide a connection to a network [...]

Romanian legislation

Article 4 of the Government Emergency Ordinance no 111/2011 on electronic communications (approved by Law no 140/2012) defines terms such as "electronic communication network", "providing electronic communication networks", "electronic communication service" etc. With respect to the Article 2 paragraph 3 b of the Regulation on information society services, Law 365/2002 on electronic commerce provides in art. 1 paragraph 1 the following definitions:

1. information society service - any service that is provided by electronic means and has the following characteristics:

- a) it is performed in view of a patrimony interest provided to the supplier usually by the recipient;
- b) the supplier and the recipient do not have to be physically present simultaneously at the same place;
- c) it is carried out by transmitting the information at the individual request of the recipient;

2. electronic means - electronic equipment and cable networks, optic fibre, radio, satellite and others, used to process, store or retransmit information;

3. service provider - any natural or legal person providing to a determined or undetermined number of people, an information society service;

4. service provider established in a state - a service provider with stable headquarters on the territory of a state and that carries on an economic activity using that stable headquarters on the territory of that state, for an indefinite period of time; the settling of a service provider in a state is not necessarily determined by the location where the technical and technological means necessary to provide the service are placed;

The above mentioned definitions are aligned with the European law.



The Hague, 22/08/2018

EDOC# 988538

Europol's Contribution to E-Evidence Proposals: Definition of Service Providers

Upon request of the Austrian Presidency Europol is contributing input to Council document WK 9012/2018 INIT. The legislative proposal has direct impact on Europol's daily work and is therefore considered to be of utmost importance for the agency.

Europol's contribution has been elaborated on the basis of the practical operational experience of the Agency in supporting the European Union Member States (EU MS) cross-border investigations. In particular, the operational experiences of Europol's European Cybercrime Centre (EC3) and Europol's EU Internet Referral Unit (EU IRU), in the areas of combating cybercrime and terrorism respectively, along with associated common challenges in e-evidence handling, served as foundation for this input.

Please note that the list of examples provided herewith is non-exhaustive in nature. Additionally, the category of "any other type of service providers" aims at listing a number of additional service providers of high relevance for effectively conducting cybercrime and terrorism investigations (for instance, information society service providers that do not have the storage of data as a defining component).

Examples of Service Providers for the EU E-Evidence Package (EDOC#983874)	
Type of Service Providers	EC3 and EU IRU Examples (non-exhaustive list)
Electronic communications services	<ul style="list-style-type: none"> o (instant) messaging companies (ICQ, WeChat, Kik, QQ, AOL Instant Messenger, Windows Live Messenger, MSN Messenger, Yahoo! Messenger, Viber, Skype, WhatsApp, Signal, Telegram, Wickr Me, iMessage, SnapChat, etc.) o TrueCaller o live-streaming providers (TinyChat, UStream, Livestream, etc.) o internet/phone providers (AT&T, Verizon, T-Mobile, KPN, OVH, etc.) o email providers (Hotmail, Yahoo, Gmail, etc.) o communication providers o forums (websites where one can chat) or websites where one can post comments or announcements o IRC servers o jabber servers o microblogging and social networking (Tumblr)
Information society services	<ul style="list-style-type: none"> o VPN and proxy providers o data sharing platforms (send space, pastebin) o dating websites and apps (including Tinder, Happn, Coffee meets Bagel, Grindr, match.com, plentyoffish.com) o e-shopping/merchant sites (online stores like Zalando, Amazon, etc.) o trading platforms (eBay, mobile.de, Alibaba, marktplaats, craigslist, etc.) o torrents (piratebay, UTorrent, BitTorrent, etc.) o cloud service providers o entertainment providers (Netflix, etc.) o social networking platforms (Facebook, Instagram, LinkedIn, Twitter, Google +, VKonktakte, etc.) o Content delivery network services (Akamai) o DDoS mitigation services (Cloudflare) o Booking.com type of service providers o file sharing services (Dropbox, Box, WeTransfer, DropSend, TransferNow, WeShare, SugarSync, etc.) o gaming platforms (Clash Royale, Fortnite, Clash of Clans, Pokemon Go, Angry Birds, etc.)

Internet domain name and IP numbering services	<ul style="list-style-type: none"> o Five Regional Internet Registries (RIPE NCC, American Registry for Internet Numbers (ARIN), Asia Pacific Network Information Centre (APNIC), Latin America and Caribbean Network Information Centre (LACNIC), African Network Information (AfriNIC) o Local Internet Providers (LIRs) o network operators assigning and sub-allocating Internet number resources (IP addresses) o Domain name space related services (ICANN, gTLD domain name registries, ccTLD registries, registrars, DNS hosting services) o companies collecting historical information about IPs and domains (DomainTools, CentralOps, DNSStuff, etc.) o companies involved in blacklisting of domains/IPs (SpamHouse, Phishtank, syncdb)
Any other type of service providers Any type of service provider that is not/may not be covered by the other three categories in the current definition or which may depend on interpretation and with which it is useful/would be useful to have/establish direct cooperation for receiving electronic evidence as part of criminal investigations.	<ul style="list-style-type: none"> o Platform as a Service providers o Infrastructure as a Service providers o Peer2Peer networks o anti-virus companies o malware analysis platforms (VirusTotal, HybridAnalysis, Any.Run, etc.) o Remote Desktop Providers (TeamViewer, LogMeIn, etc.) o Foursquare type of service providers o Closed Circuit Television (CCTV) providers o payment service providers (Western Union, PayPal, Ukash, ApplePay, WebMoney, PaySafeCard, Moneygram, MoneyPak, WebMoney, PerfectMoney, voucher systems, Reloadit, Skrill, Neteller, pre-paid card services like Cashu, Neosurf, etc.) o smart services (blockchain based) o cryptocurrency exchangers and mixers o Global Positioning Systems (GPS) and other satellite positioning device providers, incl. car manufacturers (for GPS data) o providers of wearables (smart watches, activity trackers, etc.) o academic institutions o Courier service providers (FedEx, DHL, UPS, etc.) o Financial services (banking sector, card schemes, etc.) o URL Shorteners (goo.gl, tinyurl.com, bit.ly, etc.) o One time Link (privnote.com, onetimesecret.com, 1ty.me, once.ly, etc.) o For-profit and non-profit crowdfunding platforms (Kickstarter, Indigogo, GoFundMe, etc) o Gaming platforms (Clash Royale, Fortnite, Clash of Clans, Pokemon Go, Angry Birds, etc.) o App marketplace (App Store, Google Play, Microsoft Store) o Online betting and gambling services (Bet365, Bwin, Betfair, Magic Red Casino, 888 Casino, etc)