

Moral Considerations on Anonymous Trading and the Deep Web

Business, Technology and Ethics

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Abstract

Deep web platforms combine web shop features with user anonymity. That leverages potential for the distribution of prohibited wares. This paper discusses ethical implications of anonymous online trading on the example of Silk Road, a former deep web shop. Incentives to partake of deep web trading are examined from different viewpoints. Consumers, sellers, platform operators and other holders of interest are considered. Technology that enables anonymous online trading and businesses that build such technology are reflected.

1 Introduction

The modern internet enables people – or entities – to do many things without the need of physical contact to others or even the real world. Buying and selling goods on the internet is well adopted and appreciated by thousands. Huge platforms like Amazon¹ or eBay² and many more enable entities to partake of online trading. It is possible to transfer money online and it can be changed to various currencies. Services like PayPal³ and technologies like cryptocurrencies facilitate cash flow without any physical interaction for end users.

A more general property of the internet is that it enables anonymity. Of course, one is not anonymous everywhere and most of the time true anonymity is not the default. In the context of this paper, anonymity means that some entity on the internet cannot be connected to their real world or “offline” identity. There exist many technologies that focus on providing anonymity. Be it anonymous connections or messages between entities via the Tor network⁴ or cash flows via the blockchain.

¹<https://www.amazon.com>

²<https://www.ebay.com>

³<https://www.paypal.com>

⁴<https://www.torproject.org>

Many ethical questions arise when anonymity and trading are combined on the internet. Markets arise that solely focus on illegal and often immoral goods – the deep web. The remainder of this work is as follows. Section 2 describes general aspects of trading and anonymity on the internet. Opportunities and pitfalls are outlined. Section 3 and 4 deal with moral implications for either consumers or sellers. The context is strongly coupled – but not limited to – “Silk Road, anonymous marketplace” [2], a former well known deep web shop. Different ethical viewpoints are taken and evaluated. Section 5 examines moral concerns, when some entity enables others to trade anonymously. Platform operators who explicitly encourage anonymous trading and businesses which develop technologies that support it are discussed critically.

2 Anonymous Online Trading

Trading goods involves at least two entities. Think of them as vendor and consumer. They could again consist of more than one entity, but for simplicity reasons, this paper does not consider a possible multitude. More entities are involved, if the traders use trading platforms or payment providers. In the case of online trading, not only the direct participants have to be considered, but also for example the internet service providers (ISPs) or trading platform operators. Governments are also involved to some extent, as both – vendor and consumer – could live in countries where some regulations on trading are set up. This section will elaborate on the question, what it means for online traders to be anonymous. The consequences for other holders of interest are discussed. The focus is set on deep web markets, especially Silk Road.

2.1 Anonymous Entities

Each entity involved in a trading process could be anonymous. In the context of black markets on the internet, such as Silk Road [2], there are mainly three parties involved during trade: the seller, the buyer and the platform operator. Any of which has different interests in keeping up the anonymity. Anonymity means, that the entity on the internet cannot be held accountable for their online activities in the real world [6].

In the first place, being anonymous means being private. From a consumers perspective, anonymity is good for acting in secrecy. People who are embarrassed about some products, for example erotics, may seek anonymous market places to buy them.

The Silk Road analysis in [2] showed, that the platform is strongly dominated by drug businesses. As soon as illegal goods or services are involved, anonymity gets a different level of importance. Staying anonymous brings some level of safety. Safety from prosecution or law enforcement on the one hand, and safety from other competing sellers on the other hand. Thus I argue, that the success of deep web markets is mainly influenced by the ability to act anonymously.

2.2 Trusting the Anonymity

One of the biggest challenges for anonymous online trading is to keep up the anonymity throughout the whole trading process. A lot weak spots in the communication infrastructure have to be considered; the anonymous online communication itself, transferring

money between entities and, most often, exchanging material commodities over some geographical distance. Many steps in the process can leak a traders real identity.

For business success, the involved entities have to trust either each other or in the trading process itself. Trust is a very important driver for internet trading success [1].

Deep web platforms like Silk Road combine many technologies to enable anonymity for all involved parties [2]. Trust in generally available technologies is something that the platform operators do not have to build up themselves. By using trustworthy technologies, one can accomplish at least some level of trustworthiness, in terms of communication security. Many deep web stores use the Tor network⁵ to facilitate anonymous connections for all entities[2]. The most commonly used payment method is some cryptocurrency exchange, for example Bitcoin. On Silk Road, even the prices for the products were directly displayed in Bitcoin. Furthermore, Silk Road provided recommendations for securing the internet connection and how to exchange wares anonymously. They recommend to use “delivery addresses that are distinct to a buyer’s residence” [2]. But ultimately it is the traders choice to trust a platform and also their own responsibility to install proper mechanisms to keep up anonymity.

2.3 Effects of Anonymity during Trade

Staying anonymous during trade has many effects, apart from the directly visible effects like safety and privacy. Karen Frost-Arnold [6] states the theory, that anonymity on the internet can be seen as a driver for diversity – in a context of free speech, blogging or online encyclopedias. Accountability on the other hand diminishes diversity [6]. To some extent, I feel that is applicable to anonymous online markets.

Silk Road offered a diverse variety of goods. In the context of deep web markets, this diversity of goods often comes along with their illegality or immorality [2]. We can compare that to legal, non-anonymous online markets such as Amazon. Few to none of the sold commodities on Silk Road are sold on normal web shops. I argue that is because of the anonymous trading possibilities that are only available on certain deep web shops. I conclude a similar result as in [6], anonymity is indeed a driver for – admittedly questionable – diversity.

This has different effects for many participants. Governments typically seek to control illegal goods and their distribution, in especially weapons or drugs. Depending on how well all traders secured their anonymity, prosecuting such trades becomes very difficult for governments. Except from illegality of goods, the trade itself cannot be controlled. Consumers have no law enforcement backing them, if they get ripped off by some seller.

From a vendors perspective, anonymous online trading allows for selling questionable goods, that would have been difficult to sell otherwise. They can address a broader range of customers. Furthermore, they can do so quite openly without the fear of prosecution.

From a consumers perspective, anonymous online trading offers the possibility to retrieve commodities, that are not accessible easily in the offline world. On the other hand, the anonymity of sellers directly influences the trust that consumers have towards the sellers. As trust is very important for internet trading success [1], other mechanisms have to be used to reestablish consumer trust on anonymous markets. Section 3 discusses trust among anonymous traders in detail.

⁵<https://www.torproject.org>

3 Consumer Ethics

Most online trading does not happen exactly simultaneously, but rather one party – the consumer – pays in advance. If both entities are truly anonymous, there is no guarantee that the consumer will really receive the goods she paid for. This is called the “trust dilemma” [1]. The dilemma arises, because no third party could enforce justice; vendors could just take the money without sending anything. Nonetheless, the absence of regulations for consumer safety does not hinder anonymous trading. And surprisingly enough, anonymous markets work – in a sense that consumers dare to buy goods and in turn really receive the goods they paid for [2]. This section collects some ethical thoughts about consumers, trust and justice.

3.1 Anonymous Accountability

What can a consumer expect the vendor to behave like, and why? Consumers need to build up trust towards sellers to overcome the trust dilemma [1]. From a consumers perspective, trust could arise if there is a visible motive for a seller to actually ship the goods. But also a trustworthy history of a sellers activities could build up trust.

Many regular online shops, as well as deep web shops like Silk Road, employ reputation systems for sellers [1, 2]. Consumers who bought articles can give feedback on the sellers activities. That feedback is visible for everybody else. Positive feedback could encourage trust, whilst negative feedback diminishes trust and could ultimately result in other consumers backing off from a misbehaving seller [1]. In the example of Silk Road, reputation was coupled to a sellers pseudonym [2]. Each potential consumer could review a sellers reputation and build up their own trust towards an anonymous seller. Thus, anonymity can be kept without diminishing trust and without any need for offline accountability [1, 6].

Given such a reputation system, consumers can more easily anticipate seller behavior. Surely, a seller would not want to get negative reputation, would they?

3.2 Trusting a Market Platform

Trusting in other consumers feedback in turn requires trust into the reputation system itself. The reputation system is built and offered by the platform, like Amazon or Silk Road. I find it very interesting, why consumers decide to put trust in a platform. I could not find clear studies about consumers choice for a particular platform. So I argue, that trust in a platform is built up via different channels on the internet. I strongly believe that recommendations on some blogs or discussions in forums spread the word for “well working” deep markets. For example, people discuss about Silk Roads reliability on other platforms, like reddit⁶. I think those discussions build up trust. When consumers ultimately decide for a platform, that is often based on trust in other consumers experience, discussed on some other media than the questioned platform. I think discussions on the internet can be compared to a reputation system to some extent.

⁶<https://www.reddit.com>

4 Viewpoints on Vendor Morality

Sellers on Silk Road typically sell a lot of different wares and not just one thing. For example, one seller specializes on drugs. Being a seller on Silk Road comes with the creation of a seller page, to offer multiple items on. Furthermore, being a seller comes with a fee to pay to the platform [2]. Thus, vendors on Silk Road can be seen as businesses. When running a business, one may consider different ethical viewpoints.

As an anonymous vendor, there is no need to actually send any goods, once a payment is received. As discussed, Silk Road enrolled a reputation system to overcome the trust dilemma. The remainder of this section assumes, that there is some driver for anonymous sellers to actually send out their goods. It covers the question, what ethical viewpoints or motives a sellers could have, to partake of anonymous online trading. Two well known ethical theories are reflected in the context of anonymous sellers behavior. First, Milton Friedman’s shareholder theory [5] is applied to anonymous online market vendors. Second, the stakeholder theory by Edward Freeman [4] is discussed in context.

4.1 About the Law

Both, shareholder and stakeholder theory come with the obligation to obey the law when running a business [5, 4]. One can argue about anonymous online trading and the law. It strongly depends on what goods are sold and to what countries they are shipped. Exactly that is the point – there are countries, where certain drugs or the possession of weapons are legal. As the seller is anonymous, we do not know what legal obligations apply. And as the trading happens fully anonymous, a seller cannot know which legal obligations frame his customers. In a fully anonymous context, nobody can possibly know what legal constraints apply to whom.

If it is unknown what legal obligations are forced upon some entity, does that entity have to obey all possible obligations (on the world) or none? I argue that we – as external observers – are in no position to judge. One cannot say whether it is legally wrong to buy or sell something, without knowing the law.

This applies for all the anonymized online communication, but what is with shipping goods? Again, it is notably that we do not know with certainty, if a seller breaks a law *just by sending* goods to some country. So we cannot judge in a legal sense about the seller. Consumers are the only entities that have to specify a real world address for shipping. That is the only certainty we get when judging about the transaction in a legal sense. Considering the wares on Silk Road [2], most probably consumers would break a law by receiving those goods in most countries of the world. But as long we do not know where a seller is located, we cannot be certain that they would break any laws as well.

Keeping this in mind, we will discuss if anonymous sellers can act ethically.

4.2 Shareholder Theory

Milton Friedman proposed the shareholder theory in 1970. It basically states that the main responsibility of a business is to maximize its own profit. That is, as long the business obeys the law and “ethical custom” of the society [5].

Maximizing profit in the context of anonymous online trading, maybe on a deep web platform like Silk Road, is directly dependent on building up positive reputation. As pointed out in section 3, positive reputation contributes to consumer trust, which is essential to keep an anonymous business running. That means, it is a sellers intrinsic motivation to make the consumers happy in order to gather positive reputation and keep up the business. Especially by shipping the goods.

Thus, from a shareholders perspective, an anonymous online seller acts ethically, when the business actions lead to positive reputation. The business keeps flourishing as long as the consumers are satisfied, which only can happen if the correct wares are shipped.

This causal chain is very easy to anticipate from a consumers perspective. When considering to buy something, consumers might ask themselves “What can I expect the seller to behave like, and why?” It seems very obvious for a consumer to anticipate, that a seller would at least want to maximize profit – that a seller acts ethical at least up to their own interests. Along with the reputation system that surely leads to the conclusion that one will receive the wares. I think this is one of the main reasons why anonymous online trading works in general.

4.3 Stakeholder Theory

In 1984 Edward Freeman proposed the stakeholder theory [4]. It includes not just shareholders, but any entity affected by business actions, such as employees or customers. Countries, or more precisely governments can be considered stakeholders on any kind of trade. The import of banned substances or weapons violates many governments interests. Generally, any import may concern a government, because tax fees may apply. Thus we can agree, that governments are stakeholders on anonymous online business.

Customers are stakeholders as well. A customer decides at the time of the trade, to eventually break the law of the country she lives in. Nevertheless, it is a customers interest to receive the goods they paid for. That gives a potential conflict with governmental interests. If a seller obeys governmental interests and does not send any goods, that would conflict with the customers interest. On the other hand, if a seller serves up to customer interests, they eventually break some laws.

For anonymous online trading, most of the time sellers do not know in advance which country a buyer belongs to. Thus, a seller does not know in advance if serving this particular customer could eventually break some laws. For example on Silk Road the shipping information becomes available after payment. A customer sends the money and some encrypted message where to ship to [2]. Once the money is received, the seller is left with the ethical conflict to send goods to a country where they could be banned. Anonymization during the trading process makes it impossible for a seller to exclude certain customers before the trade. The only way to avoid this potential conflict is to not sell at all to anonymous customers. Or to only sell goods that are definitely neither prohibited nor taxed by any country in the world, where potential customers could live.

It is impossible for a seller to act up to all stakeholders interests, when selling questionable goods to an anonymous audience. Consequently, anonymous online trading in the deep web can be considered unethical from a stakeholders perspective. There will always be conflicting interest between the different stakeholders. Thus, any deep web shop like Silk Road can be considered unethical, in the sense of the stakeholder theory.

5 Facilitating Anonymous Trading

Many different ethical viewpoints have been taken and moral implications and consequences of consumer and seller actions have been discussed in the context of deep web shops.

The following section covers thoughts about offering technology and enabling others to trade anonymously on deep web platforms. Knowing what those other entities could do, is it morally justifiable to develop software or host platforms for anonymous trading? Different viewpoints are discussed. Two main perspectives are differentiated. Software developers and their employing companies on the one hand and anonymous market platform operators on the other hand. Business ethics are discussed for both sides.

5.1 Running a Platform

All traders on Silk Road were anonymous. The platform operators did not know with certainty, what legal obligations may apply to whom. The platform *could* be used to for illegal business in some countries, but the operators cannot know for sure. They know absolutely nothing about the traders. All they know is, that it brings in money (the seller's fees). For Silk Road that was approximately 92k USD per month [2]. According to the shareholder theory [5], a business has to obey the law. But as long true anonymity exists on the platform, it remains unclear what laws to apply. From a shareholders perspective, there is nothing wrong with running a platform like Silk Road.

Silk Road was more than aware of the commodities sold on the platform. It was clearly supporting drug business. Silk Road even offered categorization and search, tailored for drugs [2]. It is out of question, that everybody using or operating that platform did know what was going on. This knowledge makes it impossible to act along all stakeholders interests.

Governments and law enforcement agencies throughout the world are stakeholders to any kind of drug trading. And thus are very much interested in anonymous market places. The Silk Road bust by the FBI in 2013 gives clear evidence, that governments are indeed stakeholders to such platforms. Silk Road was a massive enabler for thousands to circumvent law enforcement while upholding illegal business. When acting along the stakeholder theory, it is clearly unethical to run a deep web business.

5.2 Software Development

Many different software tools are combined to enable anonymous trading on platforms like Silk Road. The Tor network is used to disguise connection origins. Cryptocurrencies are used for payments, because they can be exchanged without identity verification. The trading platform itself can be considered a software tool. Another essential tool would be a browser to access the platform. And there are definitely many more building blocks of software being used to make platforms like Silk Road happen.

From all the above mentioned software, only the trading platform is tailored for the deep web. All the other technologies are rather just used. They could as well be used for something completely unrelated to anonymous trading or the deep web. Is it ethical to develop software that could be used for deep web shops?

Unlike running a deep web platform, almost all tools used to stay anonymous have more general purposes. One can argue with the intended use case of some software. A similar argument as for cars may apply: a car can surely be used to run over and hurt somebody. But in general that is neither the *only* nor the *intended* use case for cars. Cryptocurrencies, the Tor network, or even internet browsers like Chrome have a multitude of legitimate use cases. Some software is not unethical, just because it could be abused for illegitimate actions. Or is it? That is a more general discussion, which I will not cover here. But it can at least be seen as questionable, to provide others with the tools to eventually do evil.

6 Conclusion

The ability to stay anonymous on the internet, combined with the features of a web shop drives platforms like Silk Road. A wide diversity of illegal and questionable goods develops. There arises a trust dilemma between sellers and buyers. The trust dilemma can be overcome by consumer feedback and reputation systems. Without any enforcement, deep web platforms establish some sort of justice between the partaking entities. Business on Silk Road can be ethical from a shareholders perspective, while it is definitely unethical from a stakeholders perspective. It remains open how to assess software distribution, that makes the whole process of anonymous online trading possible.

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