The Tale of Telegram Governance:
When the Rule of Thumb Fails

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Telegram and the Question of Governance

Telegram, like other popular messaging apps, has helped to facilitate the rapid expansion of global communications and the development of various new kinds of discourses in online spaces. Partly because of its (ostensibly) secure communication practices, minorities, political activists and civil society organizations based in politically closed countries use it to disseminate information. Telegram presents itself as a messaging service that cares deeply about freedom of expression and privacy, and which expresses its willingness to protect freedom of speech by circumventing censorship imposed by authoritarian regimes.[1]

Because it constitutes such a vast global network[2] that contains sensitive data, there are some governance issues that Telegram and its users have had to grapple with. By "governance" I mean the procedures and practices that Telegram uses to govern its community and its external affairs. In this report I aim to apply the theory of "community governance" to Telegram. Based on the briefings that I have received and some preliminary research, I have assigned Telegram's governance issues into the following categories: Telegram's relationship with governments, the safety and security of Telegram users, the opacity of data localization processes, and data breaches and lack of responses.

Telegram serves various communities around the world. Telegram's features can provide people with the tools to build communities or belong to a community. It is a suitable platform for developers. It provides the means for developers to use Telegram for their purpose, whatever that might be.[3] It is also used by local and global communities that get together due to a political or social cause. By allowing the establishment of groups of up to 200,000 members, it includes populous communities.

In this report, I argue that it is very valuable for control to be put in the hands of the community. Not only can it create a flourishing market of ideas and prevent the app's stagnation, it can also bring plurality to the app; that includes community and policy plurality.

However, in order to create communities, platforms need more than technical features. Pluralistic communities have different demands that need governance structures in order to be able to thrive and govern their behavior. Platforms also need to help create communities of admins and others who can discuss various issues. At present, the problems that have come to the surface are symptoms of a lack of appropriate governance structures. The remedy to that lack can be found by considering the theory of community governance.

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[1] The principles are laid out at this link: https://mashable.com/2015/05/18/russias-mark-zuckerberg-pavel-durov/ Telegram refers to the Mashable link in its Frequently Asked Questions, 'Wait, Do you process data requests?', located at https://telegram.org/faq#q-do-you-process-data-requests. Accessed 06/10/2020.

[2] In April 2020 Telegram announced that it has 400 million users, https://telegram.org/blog/400-million. Accessed 06/10/2020.

[3] Telegram, "Bots: An introduction for developers ...."https://core.telegram.org/bots. Accessed 06/10/2020.

1. DEFINITIONS

In the following section I define the terms I use repeatedly throughout this report.

A. Governance
For the purposes of this report, "governance" means the mechanisms that Telegram, its users and other actors use to govern their interactions with one another. The important distinction between governance and self-regulation (below) is that governance is an all-encompassing term that includes all the actors (be it the governments, the users, Telegram's employees or community leaders).

B. Self-regulation
Self-regulation means all the mechanisms that Telegram (the platform, its CEO and its employees) uses in order to govern users' behavior. Self-regulation has a narrower meaning than governance. In governance, multiple parties are involved with governing behaviors, and their actions and initiatives affect one another. Self-regulation includes only the platforms' actions.

C. Community Governance
Community governance is a form of collective control of social behavior. Community governance goes beyond considering the tech companies and governments as the sole regulators of social media platforms. It focuses on the community of people when the market and the governments are not able to regulate efficiently.[4]

Communities know their norms better than the platforms or governments. They also know better the risks that they face. They can effectively enforce their norms if the necessary infrastructures for collective action are in place.[5] Community governance does not eliminate governments and platforms' role in regulation but it highlights the role of the community.

2. TELEGRAM'S CURRENT GOVERNANCE STRUCTURES

Telegram's governance structure is a combination of market structure (self-regulation), government regulation (because Telegram has to comply with the law) and community governance.

A. Telegram principles
Telegram communicates its values to its users by referring to its co-founder's 2015 interview with Mashable.[6] Overall, Telegram claims that it has adopted the principles of protecting freedom of expression, freedom of assembly and association, data minimization[7], and avoidance of business models that require sale of data to third parties. Telegram says that protection of human rights is one of its principles.[8]

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[4] Samuel Bowles & Herbert Gintis, (2002), "Social capital and community governance", The Economic Journal, 112(483), pp.F419-F436.

[5] Ibid

[6] Christopher Miller, Mashable, 18/05/2015, "A long way from Moscow", available at: https://mashable.com/2015/05/18/russias-mark-zuckerberg-pavel-durov. Accessed 06/10/2020. The Telegram FAQ links to this article to explain Telegram's principles. https://telegram.org/faq#q-there-39s-illegal-content-on-telegram-how-do-i-take-it-down

[7] Telegram, "Telegram Privacy Policy", available at: https://telegram.org/privacy. Accessed 06/10/2020.

[8] The Moscow Times, 13/04/2018, "Privacy is Not For Sale – Telegram's CEO Blasts Russia's Decision to Ban Messaging App", available at: https://www.themoscowtimes.com/2018/04/13/privacy-not-for-sale-telegram-ceo--blasts-russias-decision-ban-messaging-app-a61163. Accessed 06/10/2020.

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Extracting Telegram's principles from Durov's interview is not too difficult, but it is difficult to understand how Telegram governs its users' behavior or what governance structures it provides for the users to govern their own behavior and protect themselves.

B. What does Telegram regulate?

Telegram provides an encrypted communication service and has limited involvement with regulating the private groups and chats. According to Section 3.3.4 of its Privacy Policy, Telegram regulates public chats and public groups, and limits users' accounts on the grounds of spam and scams.[9] Additionally, it regulates bots, stickers and the use of Telegram's application programming interface (API).

C. The grounds for regulation

Telegram establishes the grounds based on which it takes action against its users in its Frequently Asked Questions,[10] Privacy Policy,[11] General Terms of Service[12] and API Terms of Service.[13] Telegram usually responds to policy questions and explains the reasons behind its decisions through its CEO Pavel Durov. While Durov is responsive in some circumstances, addressing issues through the CEO without having appropriate processes in place creates an unsophisticated governance mechanism. Sometimes the responses to the questions are either not transparent, or else they do not provide complete information about an issue.

According to its Terms of Service, the main grounds on which Telegram takes action are:

- the promotion of violence;

- posting illegal pornographic content;

- using Telegram for spamming and scamming.

In its FAQ, Telegram adds two more grounds based on which it takes down public channels: illegal content and copyright infringing materials.

It provides a caveat for taking down illegal content: if the content is simply an alternative opinion which is restricted in a country, Telegram does not take that content down.

It is not clear how Telegram defines illegal content, or how it makes a distinction between illegal content and alternative opinions. It is also not clear according to which jurisdiction it determines that content is illegal.

Telegram explains that in cases where it receives a third party take-down request, it assesses the request, carries out the legal checks, and takes the content down when appropriate.

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[9] Telegram, "Telegram Privacy Policy", available at: https://telegram.org/privacy. Accessed 06/10/2020.

[10] Telegram, "Telegram FAQ", available at: https://telegram.org/faq. Accessed 06/10/2020.

[11] Telegram, "Telegram Privacy Policy", available at: https://telegram.org/privacy. Accessed 06/10/2020.

[12] Telegram, "Telegram Terms of Service", available at: https://telegram.org/tos. Accessed 06/10/2020.

[13] Telegram, "Telegram API Terms of Service", available at: https://core.telegram.org/techfaq#q-can-i-verify-this. Accessed 06/10/2020.

It also has separate Terms of Service for its API. Telegram's API allows developers to create alternative apps to the one Telegram provides, but they need to ensure the safety and security of these alternatives.

D. Regulation of content

Telegram regulates content by moderating publicly viewable materials (this includes public channels, public groups, public bots and stickers). It also suspends the accounts of creators of public groups and channels, and limits other accounts when they violate the Terms of Service. It also sometimes reports that it "bans" a channel, but it is not plain what that means in relation to the other actions it takes.

It is not clear whether Telegram takes down the actual content or blocks the channels without removing the content itself. On one occasion in its FAQ it mentions that it gets involved with content-takedowns: "regarding the legality of public content, we perform the necessary legal checks and take it down when deemed appropriate."[14] Based on its past practices we can conclude that it doesn't get involved with actual content take-downs, but rather moderates content by suspending channels, and blocking channel admins and users.

E. Regulation of users and public channels and groups

Telegram takes action against those who post spam to groups, send unsolicited messages, or engage in scams using the platform. Through reports that it receives from its users, Telegram moderators make decisions based on the forwarded message. The moderators can decide to limit the abusers' Telegram accounts. Blocking could last for a period of several days or longer, depending on the seriousness and scale of the violation.

Telegram users can also report other users who send unsolicited messages through private chats. Telegram relies on the reporter's sentiments about a private message to block the spammer. It is not clear whether the moderator can review the private chat in order to establish a violation.[15]

A user can report another user for sending spam when the reporting user has received unwanted messages (advertisement, links, invite links to groups and channels) or has received a message from a stranger. A user can also report spam when the user is a group admin and has received unwanted messages in the chat group. The spammer is usually blocked for some days. Repeat offenders can be blocked for a longer period of time, or else can be permanently banned from Telegram.

Telegram also provides a 'Spambot' feature. Spambot can provide reasons as to why people have been blocked and thereby establish a more transparent process. Blocked users can also appeal Telegram's decisions by contacting the Spambot.

Admins, Groups and Channels
Telegram users can create channels and groups. Telegram contends that its groups are democratic by design, but since the group's communities have the capacity to have up to 200,000 members, groups need administration. As a result, Telegram has given the creators

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[14] Telegram, "Telegram FAQ", available at: https://telegram.org/faq. Accessed 06/10/2020.

[15] Telegram, "Telegram Spam FAQ", available at: https://telegram.org/faq_spam. Accessed 06/10/2020.

of groups and channels certain rights.[16] We can call these admins – who are usually the creators of the channel – "super admins". Super admins in the group can assign others as admins and give them certain controls over the group, or else make an admin a super admin. Admins in groups can:

- Add new admins (this is only if allowed by the super admin);

- Block members: blocking the members on Telegram can happen at various levels, for example admins can limit the user's capabilities to interact with the group for a period of time instead of banning the user permanently;

- Manage messages (delete them, pin them);

- Delete the group.[17]

Groups come in two forms: private and public. Public groups fall within the remit of Telegram regulation. The difference between groups and channels is that channels are used mostly for broadcasting content but groups can be more interactive, and members can post to groups. Admins however can limit members' contributions by having a non-interactive group. The admin rights of channels are similar to public groups.

F. Safety and Security

Pavel Durov argues that a core part of Telegram's mission is to protect human rights, which is a promising starting point as platforms are not always forthcoming about their mission and values. Durov presented Telegram "for people craving privacy and security".[18]

But there are many speculations about the operationalization of these principles. Telegram's regulation and governance processes should not violate the safety and security of Telegram users. While the safety and security of users is primarily a technical matter (and Telegram appears to treat it as such), Telegram does not address safety and security from a governance angle.

Telegram explains the security feature as follows:

> *Telegram can help when it comes to data transfer and secure communication. This means that all data (including media and files) that you send and receive via Telegram cannot be deciphered when intercepted by your internet service provider, owners of Wi-Fi routers you connect to, or other third parties.*[19]

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[16] Telegram, "Admins, Supergroups and More", available at: https://telegram.org/blog/supergroups. Accessed 06/10/2020.

[17] Telegram, "Group Chats on Telegram", available at: https://telegram.org/tour/groups#admin-tools. Accessed 06/10/2020.

[18] Danny Hakim, The New York Times, 02/12/2014, "Once Celebrated in Russia, the Programmer Pavel Durov Chooses Exile", available at: https://www.nytimes.com/2014/12/03/technology/once-celebrated-in-russia-programmer-pavel-durov-chooses-exile.html. Accessed 06/10/2020.

[19] Telegram, "Telegram FAQ", available at: https://telegram.org/faq. Accessed 06/10/2020.

Telegram presents a very positive and certain picture of the security it provides for its users: no one can read your messages. But security is not all about preventing third parties from reading content. It is also about how it addresses the unknown and unpredictable security issues that might arise for its users.

In its policies and procedures Telegram does not provide any details of how it handles security issues. It only provides an email address for reporting security issues. But it does not indicate when it will get back to people, when it will resolve the issue, or how one can inform users affected by flaws in the event that is necessary.[20]

G. Relationships with state authorities

The nature of the relationships between Internet platforms and governments are frequently controversial. To get permission to operate in a country, platforms must maintain good relationships with governments. Although most Internet platforms function in a global market and transcend borders, in some instances they have to enter the market in traditional ways such as incorporation in another country or establishing an amicable relationship with the respective government officials. This is true especially in countries with a dominant governmental sector.

Therefore depending on specific technology companies' business models, they have at times fulfilled government requests that have not gone through judicial channels. An example of this is when Saudi Arabia asked Netflix to take down a stand-up comedy show that discussed the murder of Jamal Khashoggi.[21]

The issue with messaging apps that facilitate sensitive political activities is different. Handing information to the governments can lead to imprisonment and sometimes death of platforms' users. When social media platforms have no process about when and how they hand information to governments, they can jeopardise the safety and security of political groups and people's lives, either by handing the data to an authoritarian state, or by failing to protect users' data. There are also claims that companies such as Twitter assist authoritarian countries with content take-downs and censorship during periods of unrest.[22]

Telegram has publicly criticised such practices. Durov said Facebook had "no guts and no principles" when Facebook shut down a Russian opposition page at the request of the government.[23] Telegram claims that its approach when it comes to collaboration with the government is very different from its counterparts. For example, the data that Telegram provides is limited to the phone number and IP address(es) of users. It also insists on receiving a court order, so law enforcement authorities are forced to go through judicial channels.

20 Telegram, "Telegram Applications", available at: https://telegram.org/apps#contact-for-security-researchers. Accessed 06/10/2020.
21 Mattha Busby, The Guardian, 01/01/2019, "Outrage after Netflix pulls comedy show criticising Saudi Arabia", available at: https://www.theguardian.com/media/2019/jan/01/outrage-after-netflix-pulls-comedy-show-criticising-saudi-arabia. Accessed 06/10/2020.
22 Jacob Silverman, The Baffler, 08/04/2015, "Why Is Twitter Aiding Turkish Censorship?", available at: https://thebaffler.com/latest/twitter-turkey. Accessed 06/10/2020.
23 Christopher Miller, Mashable, 18/05/2015, "A long way from Moscow", available at: https://mashable.com/2015/05/18/russias-mark-zuckerberg-pavel-durov. Accessed 06/10/2020.

Social media platforms can, on some occasions (and when not subject to specific laws and regulations), have their own procedures for handing information to state authorities. They can either have a formal communication channel through which law enforcement authorities can request information, or they can require the law enforcement agency to provide a court order to disclose the information of the users.

Telegram explicitly requires a court order from the "relevant authorities" in order to disclose any user's information.[24] In its Privacy Policy it asserts, "If Telegram receives a court order that confirms you're a terror suspect, we may disclose your IP address and phone number to the relevant authorities."

It also claims that law enforcement has never asked for such information using a court order. It does not elaborate on its process for disclosing the information. The data that it will enclose is limited to the Internet Protocol address and phone number (for private accounts and groups). It has also stated that it only discloses this information if the user is suspected of terrorism-related offences.

Telegram's policies are brief and restrictive but they do not go into the details of what the "relevant authorities" mean. It is not clear whether the "relevant authorities" include authoritarian governments as well.

The lack of clear procedures that Telegram invokes for moderating public channels on the basis of governments' requests can lead to rumours and speculation about how Telegram functions in its relationships with certain governments. These speculations are reinforced because Telegram has demonstrably not been hostile toward all governments. For example, it works with Europol[25] and Indonesia[26] to take down terrorism-related content.

3. THE GOVERNANCE PROBLEMS

To provide a more tangible picture of the problems that a lack of adequate governance can create for Telegram and its users, it is useful to look at the question through a number of different lenses:

1. government and platform relations,

2. user safety and security,

3. personal data and content delivery networks and,

4. data breach and open source

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[24] Telegram, "Telegram Privacy Policy", available at: https://telegram.org/privacy. Accessed 06/10/2020.

[25] Europol, 25/11/2019, "Europol And Telegram Take On Terrorist Propaganda Online", available at: https://www.europol.europa.eu/newsroom/news/europol-and-telegram-take-terrorist-propaganda-online. Accessed 06/10/2020.

[26] Durov's Channel, Telegram, 02/09/2017, available at: https://t.me/durov/54. Accessed 06/10/2020.

In the next sections I will explain Telegram's governance shortcomings in light of the issues that are thereby raised.

A. Government and platform relations

Amadnews was a political, anti-government public channel on Telegram. During the Iranian protests in 2017-2018, the Iranian ICT minister told Telegram via a tweet that:

> "**@Durov**: *A Telegram channel is encouraging hateful conduct, use of Molotov cocktails, armed uprising, and social unrest. NOW is the time to stop such encouragements via Telegram.*" [27]

Durov responded on the same day, saying that calls for violence are prohibited on Telegram and, if confirmed, they will block the channel. Subsequently Telegram suspended the Amadnews channel. Durov explained (via a tweet) that:

> *"A Telegram channel (Amadnews) started to instruct their subscribers to use Molotov cocktails against police and got suspended due to our "no calls for violence" rule. Be careful – there are lines one shouldn't cross."* [28]

Despite this explanation, the blocking of the channel was naturally perceived as compliance with the Iranian ICT Minister's informal take-down request on Twitter.[29] The fact that a minister requested the take-down of an opposition channel informally (via Twitter) and received a response only gave people the impression that Telegram suspended the channel at the government's request. This action shows the obscure nature of Telegram's relationship with governments. There is no transparent process through which Telegram acknowledges its cooperation with governments. Moreover, it does not report on take-downs that it initiates at the request of governments.

This is not to say that Telegram always abides by governments' requests. Telegram has indeed on occasion stood up against governments, and has even fought them in court to protect its users' privacy. Telegram challenged Russia in the Supreme Court about sharing keys with the security services to decrypt users' messages.[30] But ad hoc, reflexive processes might not be as effective as an overall governance mechanism.

In this sense, having a proper governance mechanism would help Telegram to uphold its principles and avoid accusations of taking capricious action at the request of governments.

B. Rule of Thumb v. Governance

Running a platform without a governance mechanism leads to haphazard decision-making. Without rules, decisions are not made via a well-understood process. Instead, decisions are made with a focus on the outcome, making them appear ad hoc. When Telegram shut down

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[27] @azarijahromi, 30/12/2017, https://twitter.com/azarijahromi/status/947098403531640832, Accessed 06/10/2020.

[28] @durov, Twitter, 30/12/2017, available at: https://twitter.com/durov/status/947179988213624832. Accessed 06/10/2020

[29] Mohammad Ali Shabani, 31/12/2017, Al Monitor, "How Rouhani can use protests to advance reform", available at: https://www.al-monitor.com/pulse/originals/2017/12/iran-rouhani-protests-reaction-reactions-future-demands.html. Accessed 06/10/2020.

[30] Global Freedom of Expression, Columbia University, "Telegram v. Federal Security Services", available at: https://globalfreedomofexpression.columbia.edu/cases/telegram-v-federal-security-services. Accessed 06/10/2020.

a channel (Showman1) on the basis that it "promoted violence", it was not clear what criteria Telegram had adopted to decide whether or not the channel was promoting violence, and how it processed this evidence.

Durov argued that Telegram takes down terrorist channels such as ISIS-related channels, that making a decision about which channels promote violence is "pretty straightforward", and that such decisions can be taken using a rule of thumb.

In the same statement, he said:

"Another recent example of a line one shouldn't cross is an Iranian channel ('showman1') that started to urge its members to throw stones into the windows of public buildings and vehicles (schools, temples, buses) and film it. We got in touch with the channel admins and asked them to stop this vandalism contest; not only did they ignore us, but launched another creepy competition urging their 100K+ users to burn mosques by throwing Molotov cocktails into them and film it. As a result, we were left with no other option but to block their channel."[31]

How Telegram went about taking down the channel should have been outlined in its policy, providing more details as to how the process usually works. But instead Durov decided to say how they went about taking it down in a statement.

The case that Durov took action on might have clearly related to the promotion of violence. But the line is not always as straightforward, and a "rule of thumb" does not substantiate the process. For example, not all cases of terrorism are comparable to ISIS channels. Taking down ISIS Telegram channels does not mean that Telegram moderates all the terrorism-related content on their platform.

A rule of thumb is not sufficient for making consistent, transparent and objective decisions when governing people. Telegram needs to govern people's behavior based on a governance mechanism.

C. Content delivery networks and personal information

In another case, the Iranian government had announced that Telegram was moving some of its servers to Iran.[32] Telegram rejected the claim and said that it does not install servers in Iran. Durov provided more information about what he believed the government might have been referring to:

Telegram uses a global Content Distribution Network (CDN) provider to cache available data in many places where they don't want to install their own servers. No one can decipher the cache and the personal information it might contain.[33]

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[31] Pavel Durov, 29/10/2017, "Telegram and the Freedom of Speech", available at: https://telegra.ph/Telegram-and-Freedom-of-Speech-10-29. Accessed 06/10/2020.

[32] Amir Vahdat, The Seattle Times, 30/07/2017, "Telegram denies Iran's claim it installed servers there", available at: https://www.seattletimes.com/business/iran-telegram-transfers-some-of-its-servers-to-iran. Accessed 06/10/2020.

[33] Pavel Durov, 30/07/2017, "On Rumors About Telegram Servers in Weird Places", available at: https://telegra.ph/On-Rumors-About-Telegram-Servers-in-Weird-Places-07-30. Accessed 06/10/2020.

It is true that the caches cannot be deciphered and there will be no access to content. But there are two major issues at stake here:

1 To install those caches, the CDN generally must work with a local Internet Service Provider or an Internet Exchange Point. The CDN cannot insert its own caches in a country without having to transact with local actors. Durov did not mention this detail in his statement.

2 Data queries that happen on caches contain metadata that can be sensitive. Caches need the IP addresses of the users and know the full URL (link) that the client (Telegram user) asked for. When a local cache communicates with its users, it needs their IP addresses and if transport layer security (TLS) version 1.3 is not used, all of the URL is transmitted in the clear.

What can happen is that the ISP or the IXP, at the request of the government, installs sniffers that observe IP address and (possibly) URLs. Such a sniffer can determine which IP addresses accessed which links, and can subsequently identify the person or the household behind the IP address.[34]

Telegram needed to admit that there might be risks involved with caches so that the Iranian users can decide to use Telegram or forgo using it. In addition, it should have mentioned the potential transaction the CDNs might undertake with local actors and specifically the governments.

D. User safety and security
Some time ago, 42 million Telegram user IDs and phone numbers were leaked and exposed online. This "data breach" happened because Telegram users downloaded two insecure "forked" Telegram apps.[35] A Telegram employee explained:

We can confirm that the data seems to have originated from third-party forks extracting user contacts. Unfortunately, despite our warnings, people in Iran are still using unverified apps. Telegram apps are open source, so it's important to use our official apps that support verifiable builds.[36]

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[34] It is necessary to note that the server only allows media from public channels with more than 100,000 subscribers to be cached in CDN data centers. This means that the CDN caches are only used in public channels and not for individual accounts or private data. If the caches are only used for channels, it means that only by joining the public channels with more than 100,000 users, the users IP addresses might be gathered. This might minimize the effect of keeping caches in various countries but does not alleviate the concern. If a channel passes the 100,000 users' threshold, Telegram needs to inform the users that the situation has changed and tell them the potential risks involved with using that channel. More details are available in this public statement from Pavel Durov: Telegram, "Encrypted CDNs for Speed and Security", available at: https://core.telegram.org/cdn. Accessed 06/10/2020 and Telegram, "More Speed and Security!", available at: https://telegram.org/blog/encrypted-cdns. Accessed 06/10/2020.

[35] Forking means taking one code base of a program and making a different program with it, without merging those changes back to the original development code base.

[36] Paul Bischoff, Comparitech, 30/03/2020, "42 million Iranian "Telegram" user IDs and phone numbers leaked online: report", available at: https://www.comparitech.com/blog/information-security/iranian-telegram-accounts-leaked. Accessed 06/10/2020.

Telegram is no stranger to these kinds of problems. In 2017 the company had to change its terms of service, adding a transparency section, because some forked apps were not secure.[37] While Telegram does have a number of mechanisms to verify the apps, it is important to revisit those mechanisms and find out what can be done to avoid such data breaches.

Loosely communicated warnings, and fine print in the terms of service are not sufficient means of providing security and protecting users. Warnings must be built into systems in order to inform users that they are either downloading an unverified version of the app, or that they are communicating with one.

4. Summary

In part I, I provided a background about Telegram's current processes and how they address some of the issue areas that require governance mechanisms. I focused on mainly the following issue areas: content and user regulation, safety and security and relationships with state authorities.

Telegram tries to be brief in its policies, but provides more background through other means, such as its FAQ page. In content and user regulation, Telegram mainly relies on its users to report the problems and its moderators to tackle resolve them. It seems like it does not get involved with each individual piece of content, but rather suspends user accounts. When it comes to user safety and security, Telegram has a very tech-solutionist approach by overwhelmingly relying on technical means to tackle users' concerns. Its relationship with state authorities suffers from a lack of clear structure; on the one hand it prides itself in not cooperating with authoritarian states, on the other it is often unclear what grounds its decisions are based on, sometimes giving the impression that it is in fact cooperating with state authorities.

Overall, Telegram has a predominantly technology-driven and solutionist approach to solving regulatory and governance problems. It believes technical arguments and features such as "bots" and "technical fixes" are sufficient. But as we witnessed in the four issue areas of this report, many of the problems that Telegram faces cannot be quickly fixed by changes to the Terms of Service or through technical fixes. Telegram is in need of governance structures that can address these problems in a holistic way.

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[37] Pavel Durov, 27/09/2017, "New Rules for Alternative Telegram Clients", available at: https://telegra.ph/New-Rules-for-Alternative-Telegram-Clients-08-27. Accessed 06/10/2020.

User Experiences and Potential Improvements

In Part I, I discussed how Telegram apparently perceives technology as the solution to its governance problems. For example, it gives the impression that because it uses encryption, it provides a safer and more secure service for its users without emphasizing its governance structures.[38] It also has not established sufficient mechanisms to govern users' behavior. When it has to address a governance issue, it normally does so through seemingly ad hoc CEO statements instead of through well-defined processes.

In this part of the report, I first outline the survey results and the issues that some Telegram channel admins reported in their use of the platform. I will then apply theories of collective efficacy and procedural justice to suggest some policies that Telegram can adopt, to govern both its users and itself in a more consistent, transparent and accountable manner. I briefly discuss the collective efficacy and procedural justice theories of governance; then, with reference to examples at the micro-level, I develop a set of policy proposals.

The reason to foreground these theories of governance is to improve Telegram's governance practices. Some platforms have taken the governance solutions out of the hands of their communities.[39] They have created enforcement mechanisms that are often punitive, ineffective, or both. By drawing upon some parts of the theories I recommend, Telegram might be able to chart another path.

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[38] Telegram's FAQ states that: Thanks to our multi-data center infrastructure and encryption, Telegram is faster and way more secure [than WhatsApp]: https://telegram.org/faq#q-how-is-telegram-different-from-whatsapp; Telegram also announced anti-censorship tools https://techcrunch.com/2020/06/22/telegram-anti-censorship-china-iran/

[39] One prime example of this is Facebook's Oversight Board. It is a top-down approach to the governance problem without much community involvement. Some of these top-down approaches have been captured in this report: Ben Bradford et al, Report of The Facebook Data Transparency Advisory Group, April 2019, The Justice Collaboratory, Yale Law School. This report can be found at: https://law.yale.edu/sites/default/files/area/center/justice/document/dtag_report_5.22.2019.pdf

1. Survey and Observations

I used surveys and observational methods to 1) unearth unreported or under-reported problems and 2) provide some recommendations to improve upon Telegram processes.

A. The survey

I identified 14 channels with over one million members, 25 channels with 10,000 to 1 million members, 2 channels with fewer than 10,000 members, and 1 channel with fewer than 1000 members. Primarily, I used the website "Telegram Analytics" to identify the channels.[40] I also reached out to around 10 to 15 channel owners in the Iranian community network. Overall I identified 52 channels. I contacted the admins (operators) via Telegram or else sent email to their published addresses.

The number of contacts was low, and the response rate was also low. As a result, this sample cannot be treated as representative, and this report will not make any causal inferences. Still, there was enough anecdotal evidence to include some of the comments received in this report.

Due to a lack of time, and since a large-scale empirical research budget was not available, I was unable to use other qualitative and quantitative methods. Another reason for limiting the survey to a small number of channels was due to security concerns for survey operators and respondents. Automatic surveys that can be sent to thousands of channels (after receiving consent) were very appealing; but the active presence of hardline conservatives and state-affiliated communities on Telegram meant that such an approach could expose the research and its participants to heightened security risks.

Contactability was also limited by some channels without a Telegram account or alternative contact information. There was a low response rate from those who were contacted, suggesting perhaps that many of the channel administrators were not eager to be interviewed.

In the future, for those who want to develop the empirical part of the study on Telegram further, it will be important to consider the following:

- Contacting channels on Telegram might lead to temporary but automatic banning of your account;[41]

- Do not use your personal Telegram account for research. Telegram can record your location, the materials you share might be archived and not removed, you cannot easily delete your traces by changing your name and it might raise concerns for the survey respondents as well;

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[40] Telegram Analytics, "Iran", available at: https://ir.tgstat.com. Accessed 06/10/2020.

[41] On one occasion I was reported automatically by the admin as a spammer and it took Telegram a couple of days to unblock me. The channel had over one million subscribers which led me to believe that this might happen when contacting more popular channels

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- Make sure you indicate that you do not need any personally identifying information and that they should not send you such information at all;

- If the admin doesn't have a public contact detail on Telegram you can contact them on other platforms or via email.[42]

B. The survey questions

To understand, and perhaps discover, some unreported or underreported issues, I asked the channel admins whether they had ever faced problems managing their channel due to shortcomings in Telegram policies, or due to inappropriate design decisions or features of the app.

To understand whether they foresee potential problems, I asked them whether they had any concerns about the security of their members. I then asked them who and what could ease their concerns: employees of Telegram, the admins themselves or both. I also asked whether they believed they belonged to a community and how they would assess Telegram's performance in responding to the enquiries.[43]

C. The survey responses

Some survey respondents were concerned about the security of the Iranian community on Telegram. They provided examples of a number of issues that they had faced:

`   *The super admin issue*
Telegram is broadly secure, but only so far as a super admin takes measures to secure their account. Telegram supports two-step verification, which is still linked to an email that is eventually linked to a phone number. This is problematic in Iran because, with a bit of research and social engineering, a SIM card associated with a phone number can be hacked and the security of the associated number thereby compromised. This is a concern that multiple admins expressed.

The multiple admin issue
While respondents applauded the flexibility that Telegram provides for admins via various features, they also had some concerns with some of those features. One such feature is the ability to assign multiple admins to channels. The respondents mentioned that if the additional admins are not aware of security issues, they might put the channel subscribers in danger. In other words, a channel's security is only as strong as the weakest security settings of any of its admins.

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[42] For a detailed discussion on how to do research on Telegram refer to:Mia Bloom and Ayse Lokmanoglu, "conducting fieldwork in a virtual space, exploring ISIS's Encrypted Messaging on Telegram", published in Stories from the Field: A Guide to Navigating Fieldwork in Political Science,edited by Peter Krause, Ora Szekely, Columbia University Press (2020),

[43] You can find a complete list of questions in Annex 1.

Community
Admins generally believed that they do not run a community, since they don't actively interact with the members, and because they broadcast without setting up or enforcing specific policies. Some mentioned that this dynamic might be different within Telegram groups.[44] The sense of lack of belonging to a community of some sort could theoretically be an impediment to persuading admins to take a role in protecting their users. For example, one of the respondents mentioned that they do not even run the channel themselves, but that a bot does it. Even Telegram bots have consequences for users which the admins need to consider, (what data they collect, how they interact with the subscribers), but since they do not know about the effects of their actions and do not interact with other admins and security communities, it is difficult for them to find out.

Admin's power to control the channel
Some admins want full control of their channels, but do not express an interest in knowing which individuals follow them. These admins generally want to know the number of followers and unfollowers. Other admins think that the level of control they receive over their channel is good, but they both want Telegram to help with securing the platform and to enable admins to protect their subscribers in case there is a security issue.

How should Telegram be governed?
Admins believed that community consultation was necessary in governing Telegram. One opinion was that Telegram must consult with admins and users about governance issues related to security and privacy. The admins argued that ultimately, Telegram should ensure the enforcement and implementation of those policies. Generally respondents were of the opinion that improvements should be made in collaboration between Telegram employees, users, and channel managers.

The respondents were generally satisfied with the level of autonomy they had in running their channel and did not want to lose the control over managing their subscribers, their channel's content and setting security levels. While some also expressed willingness to educate their subscribers about security issues, others said they did not have the resources to play an active role in protecting their subscribers. One respondent asserted that since the level of security education among admins is not uniform, it might be better for Telegram to take control of securing the platform to provide consistent protection.

Governance of Telegram: Employees and Admins
Some responses aired concerns about reachability of Telegram employees. Employees here meant those who would receive users enquiries about issues such as scam, security matters, spam, illegal copyright infringing materials and similar issues. Sometimes Telegram was responsive to the admins' requests for help, but the responsiveness was not consistent on all issues. Some respondents expressed frustration during attempts to reach out to Telegram employees. They explained that people who have direct connections with Telegram staff seem to play a gatekeeper role. One respondent emphasized the importance of having access to a reliable communication channel with Telegram employees.

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[44] As explained in part I, groups can be both public and private. The difference between the channels and groups is that in groups the admin might allow for the users to interact with each other.

D. Observed shortcomings

As well as undertaking surveys, I did some desk research and observed how Telegram's channels functioned. I observed some issues consistent with problems reported by survey respondents. I outline these below.

Account verification
One common way of undertaking phishing or disinformation campaigns is to register a deceptively similar name to the original account. The same method is used in domain name registrations, and in creating usernames and handles on social media platforms. One way platforms overcome this problem is through the verification of pages, channels or accounts.

Verification can help public-facing activists, political organizations, news organizations and the like to authenticate their accounts. Platforms authenticate accounts through email or other social media account verifications, and assign a badge to the name of the channel/account. Account verification can help protect organizations and activists accounts against false reporting and politically motivated flagging of the content.[45]

Telegram is much more than a communications platform. Channel owners undertake e-commerce, political campaigns and many other functions. They can also embed payment methods (such as PayPal) within Telegram and display advertisements. These features create an incentive for someone to set up an account similar to a successful account. Such an account might be used for various purposes, inter alia: 1) to amass advertising revenue without working on curating content; 2) to scam people and gather their payment information; 3) to deceive users to join a political/opposition channel to manipulate the users, spread disinformation and, if technically possible, to mine users' data.

While verification is important both for political channels and the users of Telegram, its current implementation has some shortcomings. As mentioned, some of the survey respondents mentioned that Telegram does not respond to verification requests promptly. Slow responses have negative consequences at least for the political and news groups because unverified channels endanger people's safety: a channel owner can communicate with channel members privately and via broadcasts which, in cases where the admin is hacked, permit a malicious actor to spread misinformation.

While one of the survey respondents reported that Telegram tackles abuse quickly and efficiently, Telegram should not plan for tackling abuse only through the closure of channels, the suspension of admins, or the like.

Political channel imposters
Political opposition channels are always at the risk of being copied by malicious actors. These actors create fake political channels and pretend that they are the original opposition channel. It appears these channels can put its members at risk since the 'fake channel' admin might have created it to surveil its members, and access their name and (if possible) their phone number.[46]

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[45] Simin Kargar, (2017), "Verification as a Remedy for Harmful Speech Online", in 'Perspectives on Harmful Speech Online' , available at: https://pdfs.semanticscholar.org/eed0/b473eebae5522778bf2c10fc9d0f6066711c.pdf#page=47. Accessed 06/10/2020. p. 47

[46] For example, the Iranian cyber police says that it has agents active on Telegram, and that its activities have led to arrests. One example of this is the arrest of the admin of a group that distributed "immoral" materials. As reported in the Iranian Students News Agency, https://www.isna.ir/news/99063022766/, Accessed 06/12/2020

Downloading the channels' content
Telegram has a feature that allows anyone to download all content shared on a public channel. One of the respondents in the survey thought this was a positive feature, perhaps because of the ability to keep a record of the content. From a digital security standpoint, however, being able to download the content of a channel may make it easier for fake channels to deceive people and enables the security services to collect evidence and documentation from at-risk communities.

Telegram's search function
Anecdotally, verification mechanisms can reduce the risk of reaching an inauthentic account (at least to some extent).[47] However, within Telegram there are some problems relating to the usefulness of verified accounts. In order for a verified account to be useful to people, the search function on Telegram should be accurate enough to show the authentic account first. This problem may be more acute for groups like the Iranian community. Because of the filtering and blocking of opposition websites, it is difficult for Iranians to access Telegram channel links on official websites. Therefore, people search for relevant channels inside Telegram. To make that useful, however, Telegram would need to enhance its search algorithm so that authentic channels come up first when people search for public channels, or otherwise alert users to the potential for confusingly named channels.

The floating "orphaned" channel
One problem that seems still to exist is channels that are "orphaned" and float around Telegram. When the creators of the channels delete their personal accounts or are inactive for several months (usually six months unless the user manually changes their settings) Telegram automatically deletes the creators' accounts but not their channels. This means that all the creators' channels remain on Telegram. Creators can transfer ownership of the channel or enable other admins to have the same power as the creator; but when they do not, their channel with all its content remains on Telegram. We can call these channels "orphaned channels".

The problem with orphaned channels is that creating imposter channels based on orphaned channels becomes easier for malicious actors. Imposter channels can download all the channels' materials and create imposter channels that are very similar to the original channel, and subsequently lure members to their channel. Sometimes, if the account of the admin has been hacked and if Telegram does not destroy the channel, the channel will linger on, and may possibly even gain more members that the imposters can prey upon. Such imposter channels could also lead to the spread of disinformation.

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[47] Some studies claim that verification does not work. Edgerly, S., & Vraga, E. K. (2019). The blue check of credibility: Does account verification matter when evaluating news on Twitter?. Cyberpsychology, behavior, and social networking, 22(4), 283-287; Wang, S. A., Pang, M. S., & Pavlou, P. A. (2018). 'Cure or Poison?' Identity Verification and the Spread of Fake News on Social Media. (September 14, 2018). Fox School of Business Research Paper, (18-040).

Telegram has some shortcomings in its decision-making processes: decisions appear to come from the CEO, and are generally not framed in terms of overarching principles or processes. If Telegram does not have processes in place to uphold their stated values, then they will not have legitimacy, even if their CEO is responsive and speaks on issues from time to time.

Also, since Telegram wants to provide its services to citizens living in authoritarian states, it needs to provide an environment for its users to be able to protect themselves. Local users are often better versed in contextual details, the country's social norms, and security risks, and they need Telegram to provide the structures to enforce those norms and assess trade-offs.[48]

2. Theories of governance

Overall, in order to more effectively uphold the security of its users, and to establish greater trust and legitimacy among them, Telegram requires clear and robust governance mechanisms that are able to reduce the frequency and severity of the incidents outlined above. In what follows, I base my governance recommendations on two theories of community governance – namely, collective efficacy and procedural justice.

A. Collective Efficacy
The theory of collective efficacy maintains that communities with structures can better achieve their collective goals. Collective efficacy asserts that one way to achieve the collective goals (in the case of this paper, the safety and security of the platform can be treated as a collective goal) is to provide a rich organizational life that can informally influence the members of their community.[49]

B. Procedural justice
Procedural justice requires decision makers to give people a chance to participate in decision-making, decision makers to be impartial and transparent about how they have made their decisions, to treat people with dignity and respect, and to communicate trustworthy motives underlying their decisions.[50] An important effect of upholding procedural justice is in building the legitimacy of the decision maker. Legitimacy is the positive perception of the authorities by people, who are more likely to follow rules as a result.

C. Application of the theories
A combination of procedural justice and collective efficacy-based approaches can encourage people to follow rules. It can also mobilize the community with the appropriate structures through which community members can cooperate and solve their safety and security issues.

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[48] Bowles, S., & Gintis, H. (2002). Social capital and community governance. The economic journal, 112(483), F419-F436. (p.423)

[49] Robert Sampson, (2012), Great American City: Chicago and Enduring Neighborhood Effect, University of Chicago Press, Chicago, IL.

[50] The Justice Collaboratory, "Procedural Justice", available at: https://law.yale.edu/justice-collaboratory/procedural-justice. Accessed 06/10/2020.

When applying community governance theories that are rooted in physical space, it is important to consider how the application might play out in an online environment. Platforms have used features on their social media platforms that are comparable to the mechanisms that community governance theories analyze.

In governance mechanisms, usually several principles have to be upheld. It is important to uphold each of the principles: as they are interrelated, the lack of one can affect the others. For example, consider a case of three principles: the organization should be responsive, transparent, and inclusive. In that case, a lack of responsiveness can affect transparency by holding information from the users about how Telegram has made decisions and prevent people having a voice in decision-making because they do not have enough information and do not know about processes through which they can participate in decision- making or make decisions themselves. Therefore sometimes I will invoke more than one of principle in the solutions I offer.

3. Governance solutions

Telegram can use the governance solutions outlined below in various stages of decision-making, such as when it is developing new policies, when it is reforming older policies, during dispute resolution and during enforcement. The ultimate goal is to help Telegram increase its institutional legitimacy.

A. A rich organizational life
In order to assess Telegram's governance and make recommendations, it is critical to identify and define an "online rich organizational life" for Telegram. Sampson considers some signs of rich organizational life in neighborhoods and physical communities such as neighborhood watches; tenant associations; voluntary groups to provide childcare; after school programs; and generally not for profit, voluntary activities that provide leadership and social capital.[51]

Telegram tries to be community oriented. This means that it attempts to give users the control of channels, groups, bot development and so on. Telegram provides channel admins with features with which they can govern their channel and groups (report spam, take content down, slow down messages,[52] and add discussion features to channels)[53]. It also has a volunteer program for users to join and respond to questions about Telegram. Some of its content moderation takes place via volunteers too.[54] It is a good start. But the community cannot flourish without the structures and processes that are necessary.

Empowering the community does not happen simply by providing users with their requested features. Telegram needs to provide its users with structures that empower users to undertake collective action. I mention some of the structures that Telegram needs to enable its community to take action when faced with issues.

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[51] Sampson, R. J. (2012). Great American city: Chicago and the enduring neighborhood effect. University of Chicago Press. p. 371

[52] Telegram, "Silent Messages, Slow Mode, Admin Titles, and More", available at: https://telegram.org/blog/silent-messages-slow-mode. Accessed 06/10/2020.

[53] Telegram, "Focused Privacy, Discussion Groups, Seamless Web Bots and More", available at: https://telegram.org/blog/privacy-discussions-web-bots. Accessed 06/10/2020.

[54] Telegram, "Telegram Support Initiative", available at: https://tsf.telegram.org. Accessed 06/10/2020.

B. The security community structure

Some survey respondents, when asked whether they had interacted with Telegram, either said no; or said they contacted the Telegram security team through the email address provided on the Telegram website, but did not receive a response.

Answering security questions and issues is both a procedural justice matter, as well as a collective efficacy matter. It is a procedural matter because procedural justice requires responsiveness from the decision makers. It is an efficacy matter because collective efficacy requires the security community to be organizationally enabled to participate in fixing Telegram security issues.

From a review of Telegram and its security community, it does not appear that those with security concerns are provided with a structure in which Telegram is also engaged. All Telegram does is to provide people with an email address to contact in case of security questions or feedback.[55] It also holds security contests that might not lead to community solutions.[56]

The difference between "individual" solutions and "community" solutions is that community solutions can be judged by a larger network of experts, and can evolve, be reformed, and not remain stagnant. Telegram does encourage individuals through those security contests. It is not obvious, however, that such contests generate any meaningful cooperation between security experts and Telegram; or, if such a security community exists, what the procedures are to join it.

It is true that security issues are sensitive and that a trusted network should be established, but there are structures that Telegram can use to support the formation of such a community. When security issues are not so serious as to put people in danger in the shorter term, the information security community has found ways to discuss issues, and perhaps discover answers through community forums. On the Internet there are many security communities that are incentivized by various methods (expansion of their network, reputational advances, and so on). Although people discuss Telegram's issues on other platforms such as Reddit,[57] it is important to create the appropriate structures within Telegram, through official security reporting channels that trusted security people can join and discuss their issues. In other words, having just an email address (and worse, one that sometimes does not even elicit a response) is not an effective solution.

A security community structure does not have to be complicated: an online forum might be enough. But procedurally it has to be clear how the security community works: the processes to join the group should be open and transparent; the Telegram security employees need to observe the problems, be responsive and forthcoming; and the diversity of the group should be maintained so that discussion does not take place in an echo chamber.

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[55] Telegram, "Telegram FAQ", available at: https://telegram.org/faq. Accessed 06/10/2020.

[56] Telegram, "Security Contest Winter 2013-2014 FAQ", available at: 06/10/2020.https://core.telegram.org/contestfaq. Accessed 06/10/2020.

[57] For example, this post by user u/etherealeminence, 27/05/2018, "This channel is blocked because it was used to spread pornographic content.", available at: https://www.reddit.com/r/Telegram/comments/8ml4or/this_channel_is_blocked_because_it_was_used_to. Accessed 06/10/2020.

C. A Town Hall

Town halls are a part of a rich organizational life because they provide the opportunity for users and decision makers to interact. Users can ask their questions, different groups can understand one another's perspectives, and everyone can collaborate to find solutions among themselves for issues that need to be faced. Because it is public, it encourages transparency and respect of people, ultimately improving the legitimacy of decision makers. Telegram would benefit from creating a virtual town hall, because at the moment there is no structured way to interact with the Telegram employees publicly (other than on Twitter).[58]

D. Empowering the community

Telegram should give a voice to users and admins who are affected or who could be affected by its decisions. This does not mean that every minor operational decision that Telegram wants to take should be subject to scrutiny. However, it is important to have mechanisms to detect what policies or features have affected the communities, and to have processes in place to empower the community to point out the problems and seek reform. Below are some examples that relate to Telegram's design features, policy, dispute resolution and enforcement.

Banning channels

If Telegram's enforcement mechanism or dispute resolution has shortcomings for some community members, there should be a process to raise the issue with Telegram. On some occasions we can see conversations on Reddit subgroups about Telegram,[59] or see Telegram tagged on Twitter to bring up issues such as the banning of channels. While these conversations are helpful and Telegram often responds to the issues in these venues, they are one-off conversations that are unlikely to lead to long term, structural reforms in Telegram's processes. For example, on the occasion when Telegram had a bug which banned some channels at random, it responded to the issue and provided the reasons for it on Twitter; but it was not clear about whether it followed up on the issue to alleviate community concerns about the ability of Telegram simply to ban channels in bulk.[60]

A similar issue can be observed in the case of Amadnews. As discussed earlier in Part I, Section A, Amadnews was a political public channel on Telegram focusing on Iranian political issues. During the Iranian protests in 2017, the channel was accused of promoting violence. Telegram "blocked" the channel and all of its mirror channels on the basis that it had allegedly promoted violence and encouraged people to commit violent acts. When asked for evidence, Durov engaged in a conversation on Twitter, but failed to provide any evidence that the channel had in fact promoted violence (he did not provide evidence in his statement either).[61]

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[58] Virtual town halls can be compared to "ask me anything" sessions that are usually held by users on various platforms. For an example refer to: Twitter, 101: Q&A Best Practices https://media.twitter.com/en_us/articles/best-practice/2020/twitter-q-a-best-practices.html

[59] For example, this post by u/etherealeminence, 27/05/2018, "This channel is blocked because it was used to spread pornographic content.", available at: https://www.reddit.com/r/Telegram/comments/8ml4or/this_channel_is_blocked_because_it_was_used_to. Accessed 06/10/2020.

[60] @telegram, 27/05/2018, Twitter post, available at: https://twitter.com/telegram/status/1000868059580698624?s=20. Accessed 06/10/2020.

[61] @Ammir, 27/05/2018, Twitter post, available at: https://twitter.com/Ammir/status/947224253040033794?s=20. Accessed 06/10/2020.

The issue here is not to prove or disprove that the channel committed the violation. It is instead to pinpoint what happens when Telegram does not design structures to support public and transparent decision-making processes. Such processes can enable Telegram to engage with people at an organizational level, explain its actions, enable people to hold it accountable, and to request reform of its processes.

Suspension of accounts
Whenever someone's account is suspended, they should be given the opportunity to respond. As discussed in part I, Telegram bans channels and blocks accounts for various reasons as explained in its ToS and FAQ.

The Spam Info Bot that Telegram offers an innovative and interesting system for processing complaints, but it is not without shortcomings. When a user is blocked, the user can report the unfair blocking to the Spam Info Bot. The bot responds:

> *I am afraid some Telegram users found your messages annoying and forwarded them to our team of moderators for inspection. The moderators have confirmed that you have been sending spam. Unfortunately your account is limited now. You will not be able to send new messages to people who do not have your phone number in their phone contacts or add them to groups and channels.*

If the user responds by saying, "*This is a mistake,*" the Bot responds:

> *If you think the limitations on your account were applied by mistake, you can submit a complaint. All complaints will be reviewed by the team's supervisor. Please note that this will have no effect on limitations that were applied with a good reason. Would you like to submit a complaint?*

If the user wants to submit a complaint they should first confirm that they never have sent unsolicited advertising, promotional messages or shocking materials. If the user confirms as much, the bot asks the user for an explanation, and forwards the user's message to the moderators' supervisor. The bot informs the user that, if the blocking is in error, then all limitations will soon be lifted from the account.

There are in fact some positive aspects about this process: the user can appeal the decision, the user can know roughly the reasons their account has been limited, and the complaint is processed in a timely manner [62]

However, the bot does not inform the user whether the limitations have been lifted unless the user asks. In the event that a complaint is upheld, the bot also does not mention why the erroneous decision was taken in the first place. It is also unclear whether this process is able to provide sufficient information to Telegram to inform other necessary moderation decisions, such as flagging accounts that file automated or frivolous reports about other users. In this circumstance too, Telegram should set up an official structure to enable its users to participate in decision-making, and give feedback on its processes so that they can be reformed.

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[62]   The author discovered these issues first hand when reported as a spammer.

Solutions

If a feature that exists on Telegram (for example not removing the channel when the creator leaves) might have caused potential problems for a group of users, not only should there be an open and public process whereby users can object, but Telegram should also explain what steps it has taken in order to mitigate those consequences. An empowered community can participate in various levels of decision-making only so long as there are clear, and well-understood processes.

E. Telegram and its relation with states

As I explained in Part I, Section A, Telegram denies cooperation with governments in taking down content that affects freedom of expression or disclosing personal data. In its FAQ, Telegram clearly states that it only takes down content that is illegal, but adds that:

> *Please note that this does not apply to local restrictions on freedom of speech. For example, if criticizing the government is illegal in some country, Telegram won't be a part of such politically motivated censorship. This goes against our founders' principles. While we do block terrorist (e.g. ISIS-related) bots and channels, we will not block anybody who peacefully expresses alternative opinions.*[63]

It is not clear how Telegram decides what an alternative opinion is and what constitutes illegal or terrorist content. It is also unclear whether Telegram complies with laws of all countries or just those that it has servers in. The FAQ broadly explains that due to its distributed infrastructure, Telegram "…can ensure that no single government or block of like-minded countries can intrude on people's privacy and freedom of expression. Telegram can be forced to give up data only if an issue is grave and universal enough to pass the scrutiny of several different legal systems around the world." [64]

The statement is not necessarily about content take-downs, but is rather about disclosing data to governments. But, even in this statement, it is not clear which legal systems have the jurisdiction to hand in a court order to Telegram; neither does it mention what the threshold is for "universal enough" issues. Such uncertainties can lead to making arbitrary decisions that affect the very rights that Telegram claims to want to protect.

Telegram, in effect, says that it does not cooperate with governments when it comes to disclosing data of its users.[65] But it does cooperate with states in other forms that could be harmful to Telegram users, and that users might not even know about.

[63] Telegram, "Telegram FAQ", available at: https://telegram.org/faq. Accessed 06/10/2020.

[64] Ibid

[65] In FAQ, Telegram states, "Thanks to this structure, we can ensure that no single government or block of like-minded countries can intrude on people's privacy and freedom of expression. Telegram can be forced to give up data only if an issue is grave and universal enough to pass the scrutiny of several different legal systems around the world. To this day, we have disclosed 0 bytes of user data to third parties, including governments." https://telegram.org/faq#q-wait-0-o-do-you-process-take-down-requests-from-third-parties

Telegram has cooperated with states on some issues. It has closely cooperated with Europol to take down terrorist content. While it announced this cooperation, it did not provide more details about the cooperation. The Europol statement says:

> *Thanks to this collaboration [Telegram and Europol], the already-existing content referral tools available to Telegram's users have been strengthened and expanded. Now, any user is able to refer and classify the content they find inappropriate and violent via the referral feature in public groups and channels. In addition, new technical developments, such as the advanced automated content detection system, continue to strengthen Telegram's effort in obliterating extremism on the platform even further.*[66]

This statement raises several questions with regard to the governance of Telegram. It mentions that any user can identify and report any content that they find "inappropriate" and "violent". These are two obscure terms without clear meaning and are not directly related to reporting known terrorist groups such as ISIS. Another issue is that Telegram (as it says in the announcement) has developed new technical solutions such as the advanced automated content detection system. It is important to know what sort of implications such automation of detection can have for users.

The point here is not to say that Telegram should stop removing terrorist content or that such actions are in contradiction with freedom of expression. The important point is the need for Telegram to inform its users about the decisions it makes that can potentially affect them, especially when it comes to its relation with state authorities. Having processes through which Telegram can communicate and disclose its relationship with the state authorities to its users can enable Telegram to make more legitimate decisions.

F. Organizational response instead of personal response

Communicating trustworthy motives is another pillar of procedural justice. The decision makers need to communicate their motives to their subjects. As explained earlier, most of Telegram's motives are expressed through their CEO. The problem with this approach is threefold:

- it is not a systematic response (you cannot ask the CEO to micromanage, and official channels for communication are sparse);

- CEO's statements are oftentimes not a complete response backed up by evidence;

- by relying on the CEO responses, Telegram does not create an organizational culture of responding to the public.

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[66] Europol, 25/11/2019, "Europol And Telegram Take On Terrorist Propaganda Online", available at: https://www.europol.europa.eu/newsroom/news/europol-and-telegram-take-terrorist-propaganda-online. Accessed 06/10/2020.

The theory of procedural justice asserts that trustworthy motives should be expressed by the authorities and decision makers to the people. But such motives need to be expressed through consistent processes by which the community engages with the organization.[67]

It is one thing to say that the CEO is committed to these principles of human rights, and quite another to show how the organization is upholding those values. A lack of systematic responsiveness (for example in cases of user verification or questions around app security) does not necessarily convey that Telegram always has the interests of its customers in mind.

G. Transparency through forewarning

Telegram's transparency falls short both of its expressed goals and of its counterparts (such as Facebook, to which it regularly compares itself).[68] Transparency is different from "being public". It does not mean that Telegram has to inform the public about every decision it makes. But transparency demands that Telegram disclose the actions that can affect its customers and provide them with the potential consequences of those decisions.

Telegram needs to build processes through which it discloses the reasons for its decisions and the effects they might have. This would enable customers to make a choice. For instance, in case of the CDN cache installation in Iran[69] (as discussed in Part I, Section 4C), Telegram should have announced that it had placed a cache in Iran via a third party, and that IP addresses of the customers could potentially be collected by the Iranian intelligence services. IP addresses can potentially reveal (when TLS 1.3 has not been used) who or which household or entity accessed certain links which can be potentially dangerous for vulnerable communities and lead to arrest and prosecution.

Transparency, as one of the attributes of governance, has to be combined with other operational tools. This is because technology corporations have often flooded customers with so much information, like long FAQs and complicated Terms of Service (TOS), that transparency becomes meaningless. One of the important functions of transparency is to inform customers about the products and their consequences. Flooding customers with information does not lead to their making informed decisions.[70]

Simple transparency through providing long service agreements might meet a company's legal requirements, but it is not well-adapted to the realities of human behavior. The transaction costs of reading long FAQs, guidelines and standards are high for customers. For many people, it is not worth reading all that material, so they remain uninformed.

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[67] Telegram has contended that it is not an organization but an idea. What I mean by having governance structures in this report is that it should have processes. I do not necessarily suggest formal organizational structures nor bureaucratic ones. I suggest some structures that Telegram needs in order to realize its idea of "everyone on this planet has a right to be free". See 200 million Monthly Active Users, https://telegram.org/blog/200-million (2018)

[68] Pavel Durov, 30/01/2020, "Why Using WhatsApp Is Dangerous", available at: https://telegra.ph/Why-Using-WhatsApp-Is-Dangerous-01-30-4. Accessed 06/10/2020.

[69] Telegram, "More Speed and Security!", available at: https://telegram.org/blog/encrypted-cdns. Accessed 06/10/2020.

[70] Hibbard, Judith H., and Ellen Peters. "Supporting informed consumer health care decisions: data presentation approaches that facilitate the use of information in choice." Annual review of public health 24.1 (2003): 413-433.

It might be possible to provide effective transparency through forewarning mechanisms. The idea of forewarning is that customers might make better and more informed decisions if they are warned about the risks of a choice close to the time the choice is actually made. This kind of forewarning may be especially important when a customer is more vulnerable than the rest of the population. For example, to reduce the transaction costs and inform the customers about the trade-offs that they are going to make, it might be better to warn customers what will happen if they join a channel, such as what data will be disclosed and to whom.

By using forewarning messages, Telegram might be able to operationalize the values it holds dear, because its vulnerable customers can understand what trade-offs they are making and what risks they are taking. This gives the customers the option to control the risk that they are willing to take, and the choice is not made for them by the company. The forewarning messages can be similar to forewarning messages (scam alerts)[71] that Telegram already uses for suspicious accounts.[72]

Consider again the issue of the installation of a cache in Iran, and Telegram's explanation. Telegram might have asked the third-party CDN provider to install a cache in an ISP in Iran. This means that it made a decision for its customers: it decided for them where their data is going to be cached. Even if Telegram was never involved in an agreement with Iranian authorities, placing a cache in an Iranian ISP might still create problems for Iranian users (such as exposing their IP address and the links they click on). Had Telegram warned its Iranian customers about the potential risks and how to remedy them, its claims of protecting human rights would have had more merit.

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[71] Telegram, "Focused Privacy, Discussion Groups, Seamless Web Bots and More", available at: https://telegram.org/blog/privacy-discussions-web-bots. Accessed 06/10/2020.

[72] This is just an example of how the forewarning messages can look like. Telegram's scam label is not a transparency label as such and is not without its shortcomings as it does not explain how it identifies accounts as "scams".

4. Conclusion

Telegram serves a number of politically vulnerable communities, in Iran and around the world. These vulnerable communities are composed of users who, owing to political and societal forms of oppression, cannot freely practice their right to participate in political opposition, or practice other fundamental freedoms of expression and assembly. Telegram's statements are clear in stating that the company places value in protecting these vulnerable communities. But evidence suggests that public statements and technical tools are not enough to protect these vulnerable communities from harm.

Telegram can overcome the shortcomings in its current governance approach by transitioning from a model that centres the personal statements and decisions of its CEO to a well-developed governance approach that makes and implements decisions by involving its community. This evolution requires Telegram to invest as much energy into developing its governance practices as it does on developing new online tools and techniques to resist online censorship.

An effective governance system requires Telegram to focus on procedural justice and community building practices to operationalize its human rights principles. It is by upholding such procedural principles that Telegram can turn into a legitimate organization that includes its community in decision-making.

These procedural principles are as follows:

- Enable the users to participate in decision-making

- Be transparent about how they made the decision

- Communicate trustworthy motives underlying the decisions

Telegram needs to empower its community by providing governance structures such as:

- Town halls: to inform the users about the decisions that are made, how and why those decisions have been made and what effects they might have on the users

- Security forums: to enable security experts to discuss security issues and collectively address security concerns

- Admin and users forums: to enable admins and users to be in contact with the customer service of Telegram and discuss issues that can affect all Telegram users or the community of admins. It is crucial for Telegram to have such processes in place to uphold transparency and responsiveness.

All in all these governance structures and processes can contribute to enhance Telegram's legitimacy, to encourage cooperation between users and Telegram, and to incentivize rule-following. If implemented, they will also help Telegram to more effectively uphold the human rights principles it claims to be guided by.

Annex 1: Survey questions

1 Have you ever faced problems in managing your channel that was due to shortcomings in Telegram policies or inappropriate design and features of the app?

2 Have you ever had concerns regarding the security of your members or yourself when managing your Telegram channel? (Security does not necessarily mean security of life and freedom. This could be data security: for example, you were worried that someone could access your members' data or that someone could find out another person has joined your channel and identify the person who joined.)

3 What and who could ease your concern regarding managing your channel? (This could be Telegram, other parties, or yourself -- if you wanted to have the power yourself to protect and secure your channel) Do you think Telegram's employees should be solely able to protect the security of its users and resolve disputes? Can you and others have an effective role in securing Telegram's channels and resolving conflicts?

4 How much would you want to be in charge of your channel? Do you think you can also help your users with keeping them secure on Telegram? Do you think that ought to be part of your role? Do you think with some technical changes and Telegram employees' support you can resolve the issues and protect your subscribers?

5 Do you think you belong to a community on Telegram because you are a channel leader? (communities are social groups that have a similar goal and could have similar concerns, interests, taste and hobbies)

6 Have you ever had interactions with Telegram employees (customer service)? (disputes, questions about some functions etc)

7 If yes, were you satisfied with the outcome and the process? (please let us know why you were satisfied or not satisfied in one or two sentences)

Annex 2: VOA Farsi and authentication

VOA Farsi is one of the more popular channels in Iran since it is well known among generations of users. With such popularity, people search for its Telegram channel in the search box of Telegram but the page that Telegram prioritizes and renders as a response to their search is not the authentic VOA channel. The inauthentic channel has so far amassed 313,089 members and, along with the news, it provides advertisement. Interestingly, VOA Farsi's official Telegram channel has only 126,908 subscribers. See the images below for more information on how VOA Farsi is rendered in Telegram.