2017 in Review

Filterwatch

An Iranian Internet Infrastructure and Policy Report

An annual Small Media report bringing you a round-up of the year’s major developments in internet policy and online censorship in Iran.

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Executive Summary

2017 was a year of numerous dramatic developments in Iran’s ICT sector. The third and theoretically final phase of the long-awaited National Information Network (SHOMA) was launched in mid-July, Iran’s filtering regime has come under increased scrutiny from both sides of the political spectrum — particularly following the instalment of the new ICT Minister Mohammad-Javad Azari Jahromi — and protests at the end December illustrated Iran’s willingness to carry out censorship and internet controls.

In this comprehensive annual report, we encapsulate the key internet policy developments of 2017. Alongside an overview of the key developments of 2017, we provide you with a number of our most popular features from our 2017 Internet Policy and Infrastructure (IIIP) reports. This year, we also look ahead to 2018, and ask what will change about information controls, and how researchers can find better ways to measure these changes.

Our first feature summarises our coverage of the 2017 presidential elections. They marked the first occasion that digital spaces constituted a primary battleground of an Iranian election, involving the active and sustained participation of both reformist and conservative political actors. Reformist politicians have long sensed the value of using social media to cultivate support among Iran's relatively young and social media-savvy electorate, but this campaign marks the first point at which conservative politicians have constructed well-oiled social media campaigning machines.

We then move on to our feature that outlines Iranian ICT policy space after Mohammad-Javad Azari Jahromi was made ICT Minister. We looked back at Jahromi’s record and his roles in public life in order to gain some insights into the likely trajectory of Iranian ICT policy in Rouhani’s second term.

And whilst it is true that Iran's National Information Network (also known as SHOMA) seeks to create a closed network, that is not to say that Iran has not engaged with international partners to make it a reality. In our third feature showcase, we looked at the international diplomacy and partnerships that have formed as Iran seeks to make itself a dominant regional ICT power.

Under the SHOMA programme, domestic and international traffic have been separated. Our next feature offers an in-depth assessment of new regulations that could formally unravel net neutrality in the country, and explain how fresh measures supposedly designed to expand access and cut tariff costs may end up driving people away from global content, and even slash usage rates of circumvention tools such as VPNs. There exists the real possibility that Iran’s new wave of ‘nudge censorship’ could prove to be the most effective one yet.
Telegram has long been a focal point of internet policy in Iran. Our fourth showcase takes a look at the sudden and impressive growth of the platform in the country, how netizen’s use it, and how it has fundamentally change socio-political discourse in Iran.

Alongside presenting you with a number of key statistics from 2017, we take a look at the unrest that ran through from 30 December 2017 to January 2018. We cover the temporary blocking of Instagram and Telegram, and also take a look at the rise of domestic apps in their place. The feature also delves into the heavy-handed nature of the security forces in dealing with the protests.

Finally, we'll be taking a look ahead at 2018 and outlining the changes that have been taking place regarding Iran’s approach to internet controls. Moving away from direct controls, authorities are turning to softer controls that revolve around price differentiation and incentivising the use of domestic products over foreign ones.
Key Developments

A lot happened in the world of Iranian internet policy in 2017—enough to fill twelve of our monthly reports! We’ll spare you the full details here, but before delving deeper into some of the thornier issues of the year in our featured articles we thought it’d be wise to pull together some of the year’s key developments into the summary below.

For full documentation of internet policy and infrastructure developments in each month, check out our index of Filterwatch reports at smallmedia.org.uk/work/filterwatch.

January 2017

- **11 January:** The Communications Regulatory Authority ordered that all of Iran’s network operators must divide domestic traffic from international traffic.1

February 2017

- **23 February:** Seyed Reza Salehi Amiri, Minister of Culture and Islamic Guidance (MCIG), said Rouhani’s government has accepted the existence of social media, and does not wish to censor cyberspace. He asserted that internet censorship does not achieve any meaningful results.2
- **28 February:** Abdolreza Azadi, Deputy of Sociocultural Affairs at the Basij announced that the Basij manages its own internet network called SHABAB, which has more than 50,000 users. He also noted that the Basij own more than 1,000 websites that are viewed more than 5 million times daily. The Salam messaging app is also produced by the Basij. He described the Salam messaging app—which has 500,000 users—as a combination of Telegram and Instagram.3

March 2017

- **5 March:** Deputy ICT Minister Mohammad Javad Azari Jahromi announced that the number of mobile internet users has increased by up to 40 million since 2013.4
- **7 March:** Mohammad Jafar Montazari, the Attorney-General of Iran announced that the judiciary blocks between 16,000 – 20,000 Telegram channels a week. Montazari said that this was not enough, and that there was a strong need for the National Information Network.5

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12 March: Vaezi stated that the Rouhani administration had no plans to filter Telegram. He was responding to rumours that the app would be filtered, and that domestically produced alternatives (such as Soroush) would be promoted instead.

April 2017

7 April: Iran’s Central Monitoring for local elections announced that 150 cities would use electronic voting in the May 2017 local elections.6

9 April: ICT Minister Vaezi announced that 27,000 previously offline villages had been connected to the internet since Rouhani came to office.7

17 April: Four days after Telegram launched its call service in Iran, the service was filtered by a judicial order.8

18 April: Director of the Telecommunication Infrastructure Company (TIC) Mohammad Javad said that those criticising the National Information Network by claiming its main purpose was security and surveillance are wrong. He instead asserted that the main objective of SHOMA is to grow the digital economy.9

May 2017

3 May: ICT Minister Vaezi lambasted conservative presidential candidates for their hypocritical stance on internet freedom. He claimed that those who had threatened to impose online information controls are now themselves prolific users of the internet. He also claimed that these individuals had purchased channels and networks with high numbers of followers in order to spread their messages before and after the election campaign.10

13 May: Following the widespread global impact of the WannaCry ransomware, Iran’s Cyber Police (FATA) asked all governmental bodies and organisations to update their operating systems to protect themselves from attack. Iran’s Information Technology Organisation (ITO) identified more than 200 victims of the ransomware in Iran.11

26 May: The Head of Iran’s Technology Organisation announced that 2.7 billion messages were exchanged on SHOMA on election day, of which 70% were multimedia messages.12

June 2017

12 June: During one of his first speeches after the 2017 Iranian presidential election, Iran’s Supreme Leader Ayatollah Khamenei spoke extensively about the state of the

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internet and the regulation of online expression. Ayatollah Khamenei was very critical of the current state of the National Information Network (SHOMA) and criticised its slow progress so far. He appeared to criticise the Rouhani administration's laissez faire approach to online content regulation, as well as its wider ICT regulation and development policies.  

- 18 June: The Iranian Information Technology Organisation (ITO) launched the website “MotoShub”, which hosts ready-made open source materials needed for starting domestic social networks. The ITO hopes that this website will allow companies, academic groups, and other social groups to use the code provided to create their own mini-social networks to serve as alternatives to popular global platforms.  

July 2017

- 2 July: CEO of the Telecommunication Infrastructure Company Mohammad Javad Azari Jahromi announced that the ICT Ministry plans to reduce internet browsing tariffs for universities by 50% as part of the development programme for SHOMA.  
- 8 July: ICT Minister Mahmoud Vaezi unveiled an online freedom of information portal. Vaezi said that this is a step towards the expansion of democracy in Iran.  
- 16 July: ICT Minister Mahmoud Vaezi unveiled the third phase of the National Information Network (SHOMA) at an event hosted at the Tehran offices of the Mobile Telecommunication Company of Iran (MCI).  
- 16 July: Ali Aslan-Shahla, a Deputy Attorney-General of Iran, claimed that the ICT Ministry has regularly failed to implement the judiciary's orders and regulations regarding the filtering of Telegram channels. He demanded further transparency over the decision-making process and the implementation of filtering in Iran.  

August 2017

- 2 August: The Supreme Council for Cyberspace (SCC) has released new regulations entitled “Policies and Actions Regarding the Organisation of Social Media Messaging Applications”. The regulations outline legal regulations for messaging apps operating in Iran. They formalise previous demands that foreign messaging apps must work with Iranian authorities to gain a license, also requiring them to move their data

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centers inside Iran. It also gives power to the ICT Ministry to make policy
recommendations to messaging apps, and to allocate licenses.20

- 9 August: Secretary of the Supreme Council on Cyberspace Abolhasan Forouzabadi
said that the SCC has written to the Attorney General asking him to loosen internet
controls for academics and media agencies.21

- 12 August: The nominee for the post of ICT Minister in Rouhani’s second cabinet,
Mohammad Javad Jahromi, claimed that Twitter’s management are ready to discuss
Iran’s demands of the company.22

- 20 August: The Iranian parliament voted in favour of Mohammad-Javad Jahromi’s
appointment as the next ICT Minister of Iran, replacing Mahmoud Vaezi. Jahromi
received 152 votes in favour, 120 opposed, and 7 abstentions.23

- 27 August: Iran’s ICT Minister Mohammad-Javad Jahromi said that Iran’s Foreign
Minister Javad Zarif has contacted Apple regarding the withdrawal of Iranian apps
from their App Store. This was in reaction to the removal24 of a number of popular
Iranian apps from Apple’s App Store a few days previously. Apple insists that its
actions were in compliance with US government sanctions imposed on Iran.25

***September 2017***

- 11 September: In a TV interview broadcast by Islamic Republic of Iran Broadcasting
(IRIB), ICT Minister Mohammad-Javad Azari Jahromi said that he is still working
towards lifting the filtering of Twitter. Jahromi said that the Iranian authorities are
looking at the issue, and although he stated that he personally feels positively about
Twitter, he warned that he may not succeed in lifting the ban.26

- 17 September: ICT Minister Mohammad-Javad Azari Jahromi announced that in
collaboration with the Ministry of Education, the ICT Ministry would produce a
blueprint for youth safety online by 22 October.27

***October 2017***

- 9 October: In response to comments from judiciary officials about cracking down on
Telegram channels, the ICT Minister Mohammad-Javad Azari Jahromi said that it is

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20 The Official Newspaper of Islamic Republic of Iran, (2017), مصوبه شورای عالی
فضای مجازی با موضوع: پیاده‌سازی‌ها و اقدامات ساماندهی پیام‌رسان‌های اجتماعی

21 Mehr News Agency, (2017), دکتر وکالت اینترنت بدون فیلتر برای اخبارگزاری‌ها

22 Mehr News Agency, (2017), اعلام آمادگی ممنوع‌بودن توئیتر برای مذاکره با ایران,

23 Digiato, (2017), گرفتار ارزیابی رای وزارت ارتباطات از مجلس رای اعتیاد گرفت

24 The Verge, (2017), Apple removes popular apps in Iran due to US sanctions retrieved

25 Mehr News Agency, (2017), پیغام حذف پایگاه‌های ایرانی از اپل توسط وزارت خارجه

26 Mehr News Agency, (2017), رفع فیلتر توئیتر را یکی از منابع ارزیابی می‌دانند

27 Mehr News Agency, (2017), طرح های وزیر برای استفاده کودکان از اینترنت
government policy to crack down on “anti-revolutionary” channels. He also insisted that this was the wish of the Iranian people.\(^{28}\)

- **23 October:** The Head of the IRGC-affiliated Passive Defense Organisation General Gholamreza Jalali said that Iran must impose its authority on social media websites. In his news conference he added that if Iran is not careful, Western countries will succeed in controlling Iranian cultural identity through social networking sites.\(^{29}\)

- **30 October:** ICT Minister Mohammad-Javad Azari Jahromi said that the Commission to Determine the Instances of Criminal Content (CDICC) agreed to allow news agencies and journalists access to an unfiltered internet.\(^{30}\)

- **31 October:** Iran’s ICT Minister Mohammad-Javad Azari Jahromi said that Iran is in the process of building a data center 200 meters underground. Jahromi stated this is to secure data centers from missile attacks.\(^{31}\)

**November 2017**

- **8 November:** Iranian mobile operator the Mobile Telecommunication Company of Iran (MCI) launched its ‘TelFi’ Android App. The app allows its customers to make or receive phone calls over WiFi. The app was developed to cater for Iranians on the Arba’een pilgrimage in Iraq. ([Source](http://bit.ly/2qherDZ))

- **12 November:** ICT Minister Mohammad-Javad Azari Jahromi used his Instagram account to welcome Tehran's hardline Friday prayer leader Seyyed Ahmad Khatami to Twitter.\(^{32}\)

- **12 November:** The Supreme Council of Cyberspace said that if an online identity verification system is operationalised by the end of the Iranian calendar year (March 2018), every Iranian should register a smart identity or else they would not be able to use banking, medical, travel or other e-services.\(^{33}\)

- **14 November:** The Supreme Council of Cyberspace warned that if foreign messaging apps do not cooperate with Iran’s demands, they face being filtered.\(^{34}\)

- **22 November:** The Communication Regulatory Authority (CRA) published new tariffs for landline internet connections. The new pricing model is due to come into effect

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\(^{28}\) Mehr News Agency, (2017), [کانال‌های تلگرامی سیاسی کشور برادر شکار ندارند](http://bit.ly/2qherDZ), retrieved 09/04/2018,

\(^{29}\) ISNA, (2017), [آموزش در دیوارکننده‌های اجتماعی اعمال شود](http://bit.ly/2H5n6Tp), retrieved 09/04/2018,

\(^{30}\) ICT Press, (2017), [وزیر ارتباطات: اینترنت بدون فیلتر به خوبی‌گران و رسانه‌ها ارائه شود](http://www.ictpress.ir/news/?item=34610), retrieved 09/04/2018,

\(^{31}\) ICT Press, (2017), [ارائه خدمات اتحادیه در عمق ۲۰۰ متری زمین است](http://www.ictpress.ir/news/?item=34636), retrieved 09/04/2018,

\(^{32}\) Mehr News Agency, (2017), [استقبال جهرمی از عضویت سیاحان خانم در تلگرام](http://bit.ly/2qfLgkA), retrieved 09/04/2018,

\(^{33}\) Majazi, (2017), [سازماندهی نظام احترام هریت در پشتیبانی‌های گزارشی](http://www.majazi.ir/services/news/thumbnail/82377/standalone/1/template/newsTemplateUserNew sViewForm), retrieved 09/04/2018,

from December. The cost of data will be cut by 50% for users visiting domestically hosted websites approved by the ICT Ministry. 

- **29 November:** ICT Minister Mohammad Javad Azari Jahromi said that Iran asked mobile phone manufacturers with more than a 40% market share in Iran to use domestically designed applications in their phones. He added that the companies have not so far been cooperative.

### December 2017

- **2 December:** ICT Minister Mohammad-Javad Azari Jahromi said that the Prosecutor's Office agreed to a regime of 'targeted filtering' based on factors such as the age and occupation of users. Jahromi stated that his ministry has prepared a set of guidelines and frameworks for this new model of filtering.

- **3 December:** ICT Minister Mohammad-Javad Azari Jahromi announced that the 50% discount for visiting domestic websites had been extended to all domestically hosted websites, and not just the top 250.

- **26 December:** ICT Minister Mohammad-Javad Azari Jahromi said that a draft data protection and privacy bill has been written in collaboration with advisors from the judiciary. Jahromi added that the draft will be made public soon for consultation and feedback.

- **31 December:** Due to street protests in Iran, Telegram and Instagram were blocked by Iranian authorities.

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The Big Issues
The 2017 presidential elections saw a marked shift in the intensity of online engagement by Iran’s conservative establishment. After years of railing against social media and decrying Western-produced platforms as trojan horses for foreign influence, Iran’s hardline conservative elite have begun to employ the very same platforms to engage in some quite sophisticated forms of political communications.

At the same time, netizens transformed everyday online spaces into fierce political battlegrounds, debating on behalf of the leading candidates. We followed the election campaign online from start to finish, and observed a hotly-contested digital media landscape that has become almost entirely organised around Iran’s two leading social platforms – Instagram and Telegram.

In this chapter we review the evolution of Iran’s digital media landscape, and the implications of citizens’ rapid uptake of Instagram and Telegram for electoral politics and political communications in Iran. This piece is based on the findings of our report #IranVotes2017: The 2017 Iranian Presidential Election on Telegram, Twitter and Instagram.41

Not So Chirpy // Twitter’s Diminishing Role

Before we turn to the new social media giants, it is important to understand the current state of former discussion hubs like Twitter, which Small Media analysed in-depth over the course of 2016’s parliamentary elections. Our 2016 election report concluded that Twitter had become increasingly marginal to Iranian citizens’ online expression, serving largely as a space for discussion between diaspora-based activists and journalists, and highly-politically engaged Iranians inside the country.

Overleaf is a map of the engagements between Persian-speaking Twitter users between 10 and 25 May 2017. Only those users whose tweets contained election-related terms were collected in this study. By using the modularity routine provided by network analytics software Gephi, we were able to detect communities and then compartmentalise the network into sub-networks. By splitting the network into sub-networks, we were able to identify clusters within each community. This approach detected 20,492 unique users, and assigned them to eight distinct clusters. See [Figure 1] for our full network map.

41 The full #IranVotes 2017 report is available at: https://smallmedia.org.uk/work/iranvotes-2017
<table>
<thead>
<tr>
<th>Group</th>
<th>Total Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reformist Media</td>
<td>6,283</td>
</tr>
<tr>
<td>Reformist Users</td>
<td>5,796</td>
</tr>
<tr>
<td>Conservatives</td>
<td>2,852</td>
</tr>
<tr>
<td>MEK</td>
<td>2,123</td>
</tr>
<tr>
<td>Critical Activists</td>
<td>1,973</td>
</tr>
<tr>
<td>Reformist Media II</td>
<td>934</td>
</tr>
<tr>
<td>Mixed Users I</td>
<td>926</td>
</tr>
<tr>
<td>Mixed Users II</td>
<td>531</td>
</tr>
</tbody>
</table>
Although these user groups continue to use Twitter actively, the platform's user base in Iran does not seem to have evolved dramatically over the past year. The largest user groups are still reformist-leaning Iranians based both inside and outside Iran, but there is a small and increasingly more active conservative presence, which propagated Raeisi's core messages around corruption and economic equality throughout the election period. The only other (in)significant presence came from the Mojahedin-e Khalq's (MEK) bot network, which has continued its long tradition of flooding Iran's Twittersphere with content hostile to the Islamic Republic.

Iran's Twittersphere did ‘leak’ into other platforms, however. During the election period, a number of popular pieces of content produced on Twitter were subsequently transplanted into high-follower Telegram channels in order to reach a wider audience and spark wider discussions.  

Ultimately though, Twitter's user base in Iran remained too small for it to pack a serious political punch alone. Whereas political candidates and their advocates flooded Instagram and Telegram with content over the campaign period, Twitter remained largely off the electoral grid.

A Photo Finish // Instagram and the Elections

After a relatively slow start, Instagram has stormed into the foreground of Iran's digital media landscape in the past two years, garnering more than 20 million users in the country. Our election report engaged in network analysis and content analysis to explain the role of the platform in the elections, and to show why Instagram has become such a potent tool for political communications in Iran at a time when it is still perceived as a politics-lite ecology in many other contexts globally.

The 2017 election marked the point at which Instagram matured as an influential and hotly contested space for political communications in Iran. Our analysis of political activity on Instagram revealed active and well-organised efforts by both reformist and conservative political activists (and candidate campaigns) to mobilise voters and attempt to influence public opinion. However, there was still a clear distinction in the methods that both camps took to engaging with their user bases.

We gathered 23,270 Instagram posts tagged with candidate names using the network analysis tool Netlytic. Although this methodology did not give us access to the entirety of the election-related content posted on Instagram, it provided us with a large and generally representative sample of the politically-engaged content on Persian-language Instagram. We engaged in in-depth image analysis of over 200 of the top Instagram posts, and content

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analysis of the captions and comments on the wider sample of 23,270 posts in order to help us understand the dynamics of the election as it was fought on Instagram, and to deepen our understanding of the practice of Iranian political communication on the platform.

The initial sample of 246 posts from the election period were coded on the basis of who the user supports, the type of image shared, the campaign issue covered, and the broad themes. At first we looked at the 20 most-liked posts of the campaign and subsequently we focused our attentions on the full 246 users who had shared at least 10 posts over the election period, and coded their outputs in detail.

The results were surprising. The vast majority of the sample were determined to be Raeisi supporters – 115 users to Rouhani’s 32 (with 99 neutral or indeterminate). However, this also confirms our hypothesis that conservative Iranian politicians have been working hard to professionalise their social media efforts, with both campaigns investing heavily in social media efforts over the election period.

At the same time, our keyword analysis indicates that although Raeisi’s camp had more active content producers, Rouhani remained the most discussed candidate on the platform, appearing around 30% more frequently. This suggests that although Raeisi’s camp produced more content, Rouhani ultimately managed to produce more debate and garner more attention among Iranian Instagram users.

Rouhani’s tactics consisted predominantly of professionalised content, providing users with crisp photography and videos, alongside relatively choreographed memes. Raeisi’s tactics differed somewhat, with the campaign deploying a high number of sockpuppet and bot accounts to distribute key images and messages widely - including a wider use of memes than Rouhani - and to inflate the metrics of support (i.e. likes) of Raeisi-aligned posts.

Something that both candidates shared, however, was their consistent use of Instagram Live as a communication tool. It comprised an important component of the candidates’ campaigns, and given the media monopoly enjoyed by state broadcaster IRIB, Instagram Live provided candidates with an easily accessible platform to share live video to the public without mediation or censorship.

**Urgent Telegram // Iran’s (Newest) Digital Public Square**

Telegram is the most widely-used messaging app in Iran, with more than 40 million users nationwide. As a consequence, it has attained a level of influence far in excess of all the digital platforms that have preceded it.

We undertook case studies of key platforms identified during the election campaign in order to document the diverse array of communication methods being used by the campaigns and their affiliates. Although the one-directional nature of interactions in

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44 Durov's Channel, (2017), retrieved 09/04/2018, [https://t.me/durov/49](https://t.me/durov/49)
Telegram channels precludes useful network analysis, we were able to observe the behaviours of key campaign-affiliated Telegram channels throughout the election period. Particularly notable was the impressive reach afforded by Telegram, and the increasingly central role the service is playing in the political campaigns of both reformist and conservative politicians.Indeed, the reach of political Telegram channels is striking – official campaign channels were able to disseminate a wide selection of media content to hundreds of thousands of followers nationwide. Never before have political actors had such freedom to wage electoral campaigns with the ability to reach vast swathes of the population without the mediation of state organs such as IRIB.

Telegram is also interesting in the variety of engagement tools it offers – images, videos, audio, and even automated two-way engagement through Telegram bots. These bots were deployed in sophisticated manner by both the Rouhani and Raeisi campaigns, and their utility for sharing news, responding to questions, and helping supporters to become active campaign volunteers will likely prove even more influential in future electoral competitions.

Raeisi's official Telegram account also had an attached bot at @raisi_orgbot [see Figure 2]. The menu offered options including:

- **Information**
  - Information about Raeisi's policy positions on a host of issues, along with an index of the works he has published over the course of his career.
- **Biography**
  - Information about Raeisi's background prior to launching his campaign.
- **Responding to Concerns**
  - Link broken – presumably contained information to help Raeisi supporters rebut concerns of Rouhani supporters about Raeisi's past record.
- **Social Networks**
  - Links to the other Telegram and Instagram-based pages of Raeisi and his campaign.
- **Supporter Profile Images**
  - Applies a supporter banner to a user's Telegram profile image
- **Points**
  - Allows users to examine the points they have accrued by inviting their friends to subscribe to the Raeisi Telegram channel.
- **Working With Us**
  - Allows users to register as volunteers with the Raeisi campaign.
- **Suggestions**
  - Provides users with the ability to provide feedback on the Raeisi bot and the campaign itself.

The deployment of bots alongside the Raesi campaign channel's regular outputs demonstrates the sophistication of the conservative candidate's online operation. Not only
was the campaign working to disseminate political messages, but it was providing mechanisms through which it could reap the benefits of supporters’ engagement.

![Telegram bot providing information about Raeisi’s record and election pledges](image)

*Figure 2 // A Telegram bot providing information about Raeisi’s record and election pledges*

We’d concede that in future studies, more effective methodologies need to be developed to undertake network-based analysis on Telegram. Although content analysis as performed here can reveal much about the methods used by campaigns and channels to attempt to influence public opinion, it is difficult to gain insights into the ways that users themselves engage with and reshare content.

Given the central role of Telegram in Iran's digital ecology, it is crucial that researchers work to explore such questions, in order that they can develop a full understanding of political communications in Iran in the months and years ahead.
Conclusions // Mass Connectivity, Mass Participation

The 2017 presidential elections marked the first occasion that digital spaces constituted a competitive central battleground of an Iranian election, involving the active and sustained participation of both reformist and conservative political actors. Reformist politicians have long sensed the value of using social media to cultivate support among Iran's relatively young and social media-savvy electorate, but this campaign marks the first point at which conservative politicians have constructed well-oiled social media campaigning machines.

The sheer size of Telegram and Instagram's respective user bases make their phenomenon fundamentally different – and more impactful – than the stunted ascendance of Facebook and Twitter in Iran from 2008 onwards. Hundreds of thousands of citizens are engaging with politicians' content on Telegram, while state broadcaster IRIB sits on the sidelines, powerless to reframe or mediate the words of Iranian politicians.

This new unmediated politics has the potential to be bolder, more radical, and also more populist in character than that which preceded it. Rouhani's largely unprecedented attacks on IRIB and the IRGC during the campaign demonstrate the power of free communications channels – such criticisms of the media establishment would not be possible unless alternative channels existed.

Although conservatives' calls for Telegram to be filtered briefly resurfaced in the wake of the unrest of December 2017/2018, it appears the will of the Rouhani government is limited here. The economic disruption and dissent triggered by Telegram's brief filtering in January 2018 demonstrated that the platform is now deeply enmeshed with the social and economic activities of a huge number of Iranian citizens. The platform does not seem to be going anywhere, and so we can expect that it will continue to play a central role in the political communications of Iranian politicians in the months and years ahead.
On 20 August 2017 the Iranian Parliament voted to approve President Rouhani’s nominee for the position of ICT Minister. Mohammad-Javad Azari Jahromi, former Deputy to the ICT Minister and CEO of the Telecommunication Infrastructure Company, was confirmed by 152 votes to 120. His narrow victory came against the backdrop of a chaotic confirmation hearing in which he faced accusations of complicity (and even active involvement) in the Intelligence Ministry’s crackdown on protesters after the widely-disputed 2009 presidential election.

Jahromi’s predecessor Mahmoud Vaezi was widely considered a reformist, and was praised by reformers and internet freedom activists alike for resisting calls to impose further online information controls. Indeed, the internet regulation policies of Rouhani’s first administration were largely framed in opposition to the censorial desires of conservatives and hardliners. Jahromi’s appointment, however, provoked genuine concern that this phase could be drawing to a close. In this chapter, we interrogate Jahromi’s record, assess his programme, and offer some predictions for his tenure at Iran’s ICT Ministry.

Interrogations // Jahromi’s Confirmation Battle

Reformists, activists and even some conservatives were quick to attack Jahromi’s record, suggesting that questions over his role in the 2009 crackdown made him unfit for office. In an effort to gain support for Jahromi, Rouhani emphasised his youth, highlighting the fact that he is the first serving cabinet minister to have been born after the 1979 Revolution. Jahromi also boasted about his support within the burgeoning tech industry. Although these words may have given Jahromi the edge he needed, his confirmation was far from an easy ride. His history hung heavily over him.

Jahromi was often the bearer of good news in the final months of Rouhani’s first government. Weeks before he was formally nominated for the post, he boasted of making efforts to lift the filtering of YouTube for academics – something that would allow academics to use YouTube for research purposes. On 18 July he also appeared in a head to head debate with head of the Commission to Determine the Instances of Criminal Content (CDICC) Abdolsamad Khoramabadi, rebutting the conservative push for extreme internet controls. But as soon as news of his nomination reached the media, his history with the

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security and intelligence forces – in particular during street protests after the 2009 election – came to light.

On 14 August 2017, the Center For Human Rights In Iran published a report highlighting Jahromi’s direct involvement in the arrest of activists in the midst of the 2009 election. In its report, a number of activists close to then-opposition leader Mir Hossein Mousavi’s campaign claim that Jahromi was either present at their interrogation, or searches of their homes. Jahromi has since vehemently denied the allegations on his Twitter account, but the reports have not yet been addressed satisfactorily.

Again, during the confirmation process Jahromi faced opposition from both reformists (“the hope list” faction) and conservatives alike. Mohammad Ali Pourmokhtar, a conservative MP, raised concerns over Jahromi’s history within the Intelligence Ministry. He concluded his speech by inviting other MPs to vote against Jahromi, warning them not to turn the ICT Ministry into “the second Intelligence Ministry”. At the end of the approval process, the 120 votes cast against Jahromi made him the least popular cabinet minister out of all the ministers confirmed.

In this light, it is important to note that the Iranian parliament has the power to dismiss any sitting minister through a vote of no confidence, which requires just a simple majority within the 290 member body. This mechanism is used somewhat regularly to punish ministers for inappropriate actions; during Rouhani’s first term in office there were three attempts to dismiss his ministers through votes of no confidence, one of which was successful and led to the removal of the Science, Research and Technology Minister Reza Faraji Dana in 2014.

Setting the Agenda // Jahromi’s Policy Objectives

Prior to appearing in parliament to seek a vote of confidence, Jahromi published his manifesto. In it, Jahromi named five technologies as the most important areas for the ICT Ministry to engage with in the coming years:

- The Internet of Things (IoT)
- Big data

47 Center For Human Rights in Iran, ‘From technical interrogator, to participation in the project for the sake of suppression; a mischievous record of Azeri Jahromi nominated by the Ministry of Communications’, 23/08/2017, https://persian.iranhumanrights.org/1396/05/having-azari-jahromi-as-minister-of-ict-raise-questions/
- Cloud computing
- 5G mobile connections
- Artificial Intelligence (AI)

However, the 20 page manifesto essentially just outlines the progress made during Rouhani’s first government, restates the legislation impacting the ICT policy making sphere, and noting the benchmarks already granted for ICT growth in Iran. In the few pages where he sets out his own strategy, Jahromi again broadly outlines previously set targets for ICT growth in Iran. There is also a notable focus on privatisation, job creation and the digital economy. It is significant that there is no mention of state filtering policies – a key area of contention between conservative and reformist policymakers up until now.

Jahromi’s primary focus, seemingly, will be to oversee a further boom in the tech economy. He has been open about his desire to be known as the ‘Minister of Startups’, and on 13 August 2017 he appeared on a platform with the CEO of DigiKala at Iran’s Chamber of Commerce, Industries, Mines and Agriculture to publicise his support among the startup community.\(^{52}\) Given the support he enjoys within this sector, and his ties to conservative political institutions, it seems very possible that Jahromi may choose to focus on promoting his agenda for the digital economy, while de-escalating public conflicts over internet filtering.

A Crowded Field // Iran’s ICT Institutions

Independent of his agenda, or how he wants to be known to the public, the new ICT Minister will have to navigate a veritable labyrinth of policy making bodies if he wishes to carve a lasting legacy out of his tenure. Let’s walk through some of the most influential ones.

The growth and expansion of internet connectivity, online tools, and digital activism in Iran has led to the creation and empowerment of a number of ICT policy making bodies in the country. There is no question that under Vaezi, the ICT Ministry has developed its power and influence within government. That said, it must still contend with a whole host of other power centres in Iran’s ICT policy sphere, many of whom lack accountability to elected institutions.

The following sections will profile the main ICT policy-making bodies in Iran, as well as other organisations that have demonstrated the ability to shape or implement ICT policy, even though they may not be formally recognised as policy-making bodies.

The Supreme Council of Cyberspace (SCC), Iran’s most powerful internet policy body, was created in 2012 by direct order of the Supreme Leader Ayatollah Seyyed Ali Khamenei. The SCC oversees and regulates activities such as the establishment of Iran’s National Information Network (SHOMA), the implementation of content controls, and the development of cyber security mechanisms. Khamenei’s order also mandated the SCC to establish a National Center for Cyberspace (NCC), operating under direction of the SCC. The NCC is tasked with providing ongoing oversight of the implementation of the SCC’s policies.

On 5 September 2015 Khamenei published an order on the SCCs website, reforming the structure of the body and establishing a new strategic agenda for the council. The new SCC consisted of 17 members drawn from ministries and government institutions, and 8 appointed by the Supreme Leader (though this number was subsequently increased to 10). The 17 institutional members of the SCC are:

- President (Head of the SCC)
- Parliamentary Speaker
- Head of the Judiciary
- Head of Islamic Republic of Iran Broadcasting (IRIB)
- Head of the National Center for Cyberspace (Secretary of the SCC)
- Attorney General
- ICT Minister
- Culture and Islamic Guidance Minister
- Science, Research and Technology Minister

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The 10 appointed members are:

- **Seyyed Saeedreza Ameli** – a professor of communications at the University of Tehran and Vice President of Planning and Information Technologies at the University of Tehran.
- **Hamid Shahryari** – Head of the Center for Statistics and Informatics at the Judiciary
- **Mehdi Akhavan Behabadi** – Former Secretary of the SCC during Ahmadinejad’s administration, and a former deputy at IRIB.
- **Masoud Aboutalebi** – IRIB advisor
- **Kamyar Saghfi** – Chancellor at Shahed University
- **Rasoul Jalili** – Dean of Scientific and International Cooperation at Sharif University of Technology
- **Seyyed Ezattollah Zarghami** – Former Head of IRIB
- **Mohammad Hasan Entezari** – Faculty member at Institute of Power and Information Technology
- **Mohammad Sarafraz** – Former Head of IRIB

A majority of council members are ideologically close to the Supreme Leader. However, as the SCC only meets at Rouhani’s discretion, he maintains a great deal of leverage over the sometimes problematic body. This issue came to the fore during the 2017 presidential election, when Rouhani’s conservative opponent Seyyed Ebrahim Raeisi (a former SCC member during his tenure as Attorney-General) criticised Rouhani for not calling regular meetings of the council, and therefore diluting its influence.

The decisions and discussions of the SCC that have been made public in recent years have demonstrated that the council does not actively seek to micromanage the internet in Iran. That being said, their views still have a direct impact on national conversations, and decisions taken by other bodies that are responsible for shaping ICT policy in Iran. For example, an August 12 directive from the SCC published guidelines for domestic and international messaging apps operating in Iran. These guidelines specify that no foreign-hosted messenger service is allowed to provide banking services through their

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The guideline also calls for the ICT Ministry to form a working group to propose standardised policies for the regulation of domestic and foreign messaging apps.

While the SCC lacks enforcement mechanisms, its decisions are recognised as ultimately determining ICT policy within the Islamic Republic. For example, the recent guidelines on messaging apps outlined above must be enforced by all branches of government and the private sector, and failure to comply on the part of the government can be dealt with by mechanisms designed to solve possible conflicts between branches.

Figure 4 // The CDICC

The Commission to Determine Instances of Criminal Content (CDICC)

The CDICC was created after the introduction of the 2009 Cyber Crime Law. It has 12 members representing the government, Parliament, the judiciary, and the Supreme Leader, and is chaired by the Attorney General. The government takes six of the twelve places on the committee. The CDICC meets every fortnight to vote on what content should be censored. In addition, a recent TV debate between Jahromi and the CDICC Secretary Khorramabadi highlighted that CDICC votes can also take place remotely, meaning that physical meetings are unnecessary.\(^{56}\)

Jahromi, who previously attended a number of CDICC meetings on behalf of Vaezi, will find himself playing a leading role in this body.

The Communications Regulatory Authority was established in 2003 on the basis of the Law of the Scope of Duties and Powers of the Ministry of Information and Communications Technology.\textsuperscript{57}

The CRA is a policy making body of the ICT Ministry. It acts as the regulatory body for Internet Service Providers (ISPs) and mobile operators, and the policies and directives coming from the CRA are considered settled state policy. Breaches of the CRA’s directives can be prosecuted by the judiciary. The CRA is also the governing body through which ISPs and mobile operators must obtain licenses to provide 3G and 4G services, which places it in an influential position within Iran’s ICT market.

Given the rapid expansion of connectivity in Iran in recent years, the body has played a significant role in shaping internet policy in the country. The CRA has been heavily involved in the regulation of internet tariff pricing by ISPs. In this regard, the CRA has issued numerous guidelines on the reduction of pricing for domestic browsing, a move which has had a chilling effect on net neutrality.\textsuperscript{58}

\textsuperscript{57} Communications Regulatory Authority of Iran, ‘Law of the Scope of Duties and Powers of the Ministry of Information and Communications Technology’, retrieved 31/01/2018, \url{http://bit.ly/IrCRA17}

Since the early days of the 1979 Revolution, Iran’s judiciary system has mirrored the Supreme Leader’s ideology and goals. Its leading officials are appointed directly by the Supreme Leader, and are accountable only to him. Furthermore, Article 160 of the Iranian Constitution gives power to the Head of the Judiciary to propose the candidates for the position of Minister of Justice to the President.\(^{59}\) This is important, as the Justice Minister is one of the government’s representatives on many policy making bodies, including the CDICC.

As mentioned, the Judiciary is represented at both the SCC and CDICC and plays an active role in limiting internet freedom in Iran through these bodies. However, the judiciary has also proven that its influence in Iran’s ICT policy goes far deeper than these policy-making bodies. In recent years, judges have summoned and charged Telegram channel administrators, and independently issued filtering orders on a number of websites, demonstrating that the judiciary and the Attorney-General have no qualms about side-stepping official procedures.\(^{60}\)

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The Telecommunication Company of Iran (TCI) was established as a state-owned telecommunications company in 1971. For many years it was the sole investor in Iran’s ICT sector, and the only provider of landline phone services to Iranians. However, as a result of a direct order from the Supreme Leader in 2006, the TCI was named as one of the state-owned companies slated for privatisation.

In 2009, President Mahmoud Ahmadinejad put 50%+1 of TCI’s shares on sale at auction. The company was quickly snapped up by the Tose’e Etamad Mobin (TEM) consortium. The TEM consortium was newly formed, and the three companies it comprised were either owned by the IRGC or by Setad – both operating under the direct command of the Supreme Leader. This was a source of controversy, as a number of other companies claimed their bid was not received by Ahmadinejad’s government, and that the auction was fixed in favour of TEM. IRGC influence over the TCI is a significant threat to internet freedom and security in Iran, as outlined in Small Media’s previous Filterwatch reports. Such direct access to crucial national ICT infrastructure raises concerns about IRGC surveillance abilities that fall outside of official policy and legal frameworks.

While the TCI is theoretically a private company, due to its extensive market share – in particular in providing landline connections – it has been a leading partner in the implementation of SHOMA, and has a representative from the ICT Ministry on its board.

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The Telecommunication Infrastructure Company (TIC)

The Telecommunication Infrastructure Company is governed by the ICT Ministry and is the sole provider of internet bandwidth in Iran. Prior to his appointment as the ICT Minister Jahromi was the CEO of TIC, and used this experience during his confirmation process to play up his ability and commitment to continuing the development of ICT infrastructure under the banner of SHOMA. On 21 August 2017 Jahromi appointed Farhad Moarefi, a former deputy chairman of the TIC board, to take his place as the Head of the TIC.

The Information Technology Organisation of Iran (ITO)

The ITO is a governmental organisation that falls under the management of the ICT Ministry. With the rapid expansion of connectivity and the seemingly never-ending implementation of SHOMA, the ITO has found itself featuring heavily in the news over the past few years. According to its website, the ITO’s mission is to provide oversight and direction to ICT projects and policies in Iran, particularly in the areas of digital security and sustainability. Currently, the ITO is headed by Vaezi’s former deputy Rasoul Seraian.

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Law Enforcement, the IRGC and the Intelligence Community

Other than policy making institutions, the judiciary, and infrastructure companies, the law enforcement and intelligence community also play a significant role in Iran's cyber-landscape.

The Iranian Cyber Police (FATA) was established in 2011 under the command of the Law Enforcement Force of the Islamic Republic of Iran. As documented in previous Filterwatch reports, FATA is very public about their monitoring and arrests relating to crimes such as online fraud. However, FATA also plays a significant role in arresting Iranian internet users for ‘improper’ use of social media, and as a result has contributed to a culture of fear and self-censorship among Iranian internet users. Most infamously, FATA was involved in the arrest and eventual death of Iranian blogger Sattar Beheshti in 2012, after which it scaled back its activities to focus on online fraud and harassment.

The IRGC has also sought to establish its own organisations to influence internet policy, which act in parallel to policy making and law enforcement bodies in the country:

- **The IRGC’s Intelligence Organisation**: Established in 2009, its main role is to participate in the online ‘Soft War’ and to identify digital threats to the Islamic Republic.
- **The Center for Inspecting Organised Crimes (CIOC)**: Set up in 2007, its main task is to fight crimes including money laundering and online theft. However, in recent years it has taken part in the IRGC’s effort to monitor and fight ‘moral’ and political offenses online.

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65 Small Media // Filterwatch, [https://smallmedia.org.uk/work/filterwatch](https://smallmedia.org.uk/work/filterwatch)
○ In August 2016 The CIOC detained hundreds of internet users over activities deemed inappropriate by the IRGC. It is still unclear which law enforcement or judicial authorities were informed of the CIOC’s plans or if any organisation other than the IRGC sanctioned such a move.

○ In 2008 Saeed Malekpour, a Canadian resident of Iranian nationality was arrested by the IRGC. Malekpour, a web developer, was arrested in Iran and accused of running a Persian porn network. Malekpour was first sentenced to death, which was later reduced to the life sentence he is serving currently.

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Global Vision – Iran’s ICT Diplomacy

Over the last few years Iran has made efforts to establish itself as a regional ICT-hub, and also set out to put itself on the world ICT stage. In this report, we'll delve into the 50+ international talks and partnerships Iran has engaged in, and establish how it sees itself on the international stage, and where it places international support in terms of furthering its regional and global ambitions.

Forging Connections // Iran’s ICT Diplomacy

Since Hassan Rouhani was first elected in 2013, there has been a rapid increase in investment in Iran's ICT sector and internet infrastructure; mainly aimed at the country's National Information Network or SHOMA. And whilst SHOMA has often been criticised as a project that will isolate Iranian ICT networks and netizens from the rest of the world, the ICT Ministry has been anything but isolationist in recent years. In terms of their rhetoric around ambitions to become a leading regional hub for ICT, the Ministry's track record of working with private sector companies from around the world, alongside collaborations with other countries, has demonstrated Iran's will – and somewhat success – in building stronger global links.

Iran's ICT development has often been associated with soft-war rhetoric and a crackdown on freedom of speech. And whilst this is true, it is also the case that Iran's hardliner language is only part of a bigger picture. Investment in internet infrastructure has had long and broad-ranging support due to its growing links with the economy. Hardliners, moderates and reformists alike have all been vocal about their optimism when it comes to growing the country's economy by expanding internet infrastructure and the ICT sector in general. In October 2016, the Head of the National Center for Cyberspace (NCC), Seyyed Abolhasan Firouzabadi, labeled cyberspace as a new sphere for economic growth, and declared that SHOMA would be a communication infrastructure that would help realise the 'resistance economy'.

Cable Ties // The Development of ICT Infrastructure

In recent years a large number of investments in Iran's infrastructure have been in partnership with other governments or private companies. Working with neighbouring countries has allowed Iran to develop its infrastructure in accordance to regional needs as well as Iran's ambitions.

One of these key multilateral ICT development projects from recent years is the Europe-Persia Express Gateway (EPEG) project, which began in June 2011. The network was

operationalised in 2013, is 10,000km long, and runs from Frankfurt across Eastern Europe, Russia, Azerbaijan, Iran, and the Persian Gulf to the capital of the Sultanate of Oman, Muscat. It has an initial capacity of 540 Gbps and a design capacity of up to 3.2 Tb/s. The project was the result of partnerships between Cable & Wireless, Rostelecom, Omantel, and the Telecommunication Infrastructure Company of Iran (TIC).

According to the consortium, the EPEG allows an alternative telecommunication transit route to the Red Sea, Suez Canal, Egypt and the Mediterranean Sea regions and plays an important role for traffic re-routing in the case of earthquakes and disasters, which have been known to affect multiple systems at once. This is particularly important in light of partial regional internet shutdowns in the past, due to damages caused to Red Sea and Suez Canal cables, as seen in 2008. The development of the EPEG could provide vital safeguards to Iran’s connectivity.

One of the flagship elements of SHOMA has been the development of fiber optic connectivity in Iran. The project guarantees improvements in speed, and is likely to be the country’s leading technology to deliver fast speed connectivity for the years ahead. Although much of its budget came from domestic sources – supported by the isolationist

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71 Europe-Persia Express Gateway, http://www.epegcable.com/#page-partners
rhetoric of some hardliners – the project was made possible through investment from, and a partnership with, South African MTN.\(^{73}\)

Similarly the recent infrastructure tests, that tested 5G technology in Iran, were enabled through partnerships between IranCell, South African MTN and Swedish Ericsson.\(^{74}\) While it is unclear when, if or how 5G will be made operational in Iran, Iranian officials continue to claim that Iran may be one of the first countries globally to use 5G technology. Whether or not their claims about 5G are legitimate, the tests are an indicator of how serious international telecommunication companies are about investing in the country.

A key element of SHOMA has been its drive to force businesses and citizens to host their data locally in Iran. This in turn has created a high local demand for hosting services in Iran - answered by local investment alongside collaboration with foreign partners. Iran has also been clear about their goal to become a regional hosting service provider. In January 2016 the governor of the Chinese province of Guangdong Zhu Xiaodan visited Iran's Qeshm Free Trade zone and promised to collaborate with Iran to help turn Qeshm into a regional data hosting hub.\(^{75}\)

**Global Support for Domestic Startups**

Rouhani's government has always been adamant that ICT development in Iran will lead to job creation. This narrative became part of the celebratory message presented to the public and the international community in the light of the Joint Comprehensive Plan of Action (JCPOA) agreement and removal of sanctions against Iran. Former ICT Minister Mahmoud Vaezi promoted the idea that the removal of sanctions could lead to a flood of global investment in Iranian tech startups.

And indeed, the hopeful tone of nuclear negotiations at its earlier stages and the JCPOA with Iran led to some positive movements in terms of foreign investment in Iran. In 2014, Pomegranate Investment was formed in Sweden with the aim to invest in entrepreneurial projects in the Middle East. Pomegranate Investment has developed a strong relationship with Iranian private venture capital firm Sarava although in February 2018\(^{76}\) it became clear that Pomegranate Investment and other venture capitalists might be fake and Sarava had created them. Small Media cannot neither confirm nor deny these allegations. Similar to Pomegranate Investment, the German giants Rocket Internet\(^{77}\) has also seen potential in

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\(^{76}\) Twitter account of Vahid Hajjehforosh, [https://twitter.com/hajjehforoosh/status/961009432988717061](https://twitter.com/hajjehforoosh/status/961009432988717061)

the Iranian market, and has been active in investing in small tech startups, often copying
tried and tested business models of tech giants such as Amazon.

In parallel, Iranian entrepreneurs themselves have also been ambitious in seeking foreign
investment. Launched in 2014, the iBridges conference has sought to bring the best of
Iranian entrepreneurship in Europe face to face with tech investors in the hope of
increasing investments in the tech sector in Iran and since 2014 two iBridges conferences
have been held across Europe. While the conferences have attracted high profile speakers
and wide media coverage, some US sanctions still imposed on Iran have proven a challenge
to the European investors seeking to invest.

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**Case Study: Pomegranate Investment**

The Swedish investment firm was established in 2014. Their public facing website
goes to extraordinary lengths to make it clear it does not offer investment
opportunities to US citizens or entities. Before entering the site, visitors must declare
they are not in the US or US citizens. The declaration also announces:

"THE INFORMATION CONTAINED ON THE FOLLOWING PAGES OF THE WEBSITE IS
RESTRICTED AND IS NOT FOR RELEASE, PUBLICATION OR DISTRIBUTION IN OR INTO
THE UNITED STATES OR TO ANY US CITIZEN OR RESIDENT OR ANY ENTITY
ORGANISED OR LOCATED IN THE UNITED STATES, NOR ANY OTHER JURISDICTION
WHERE THE COMMUNICATION OF SUCH INFORMATION IS RESTRICTED BY LAW."

Pomegranate appears to have been set up to take advantage of the growing tech
startup scene in Iran and its website boasts that “having entered the market early,
and before the implementation of the JCPOA, Pomegranate has gained an important
first-move advantage in Iran”.

According to their latest financial report from June 2017, the investment firm has
€120,430,725 invested in Iran. Pomegranate claims to have shares in the following
four Iranian startups:
**Sarava**

Sarava is a technology investment company and a pioneer in internet and e-commerce investments in Iran. Sarava has currently invested in more than 30 companies, including Iran's leading e-commerce company Digikala, the largest Persian Android marketplace Café Bazaar, the online classifieds company Divar, the first digital marketing holding in Iran PPG (which includes A-Network, ADRC, and ADAD) and technology accelerator Avatech.

Pomegranate holds a 15% stake in Sarava as of 30 June 2017.

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**Sheypoor**

Sheypoor is the second largest classifieds marketplace in Iran. Sheypoor offers a general classifieds platform, but is also developing auto and real estate verticals as part of its general brand.

Sheypoor and Divar, a Café Bazar asset and the biggest online classifieds company in Iran, have a combined market share of approximately 90% in the country.

Pomegranate holds a 43% stake in Sheypoor as of 30 June 2017.

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**Griffon Capital**

Griffon Capital is currently the largest cross border merger and acquisition (M&A) adviser in terms of number and value of mandates. The group also provides Asset Management (Capital Markets & Private Equity) as well as Investment Banking Advisory services.

Pomegranate holds a 15% stake in Griffon Capital as of 30 June 2017.

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**Carvanro**

Carvanro is Iran's leading ride-sharing site connecting passengers and verified drivers.

Pomegranate holds a 34% stake in Carvanro as of 30 June 2017.
Foreign Apps and Tech Giants

Since the mass crackdown on websites in 2009 due to Iran’s election-related protests, for many Iran’s relationship with foreign tech firms has been defined by hostility. However there have been some exceptions, particularly when it comes to Russian firms establishing a presence in Iran. Russian search engine Yandex started operating in Iran in 2015, and at the start there were high profile talks about Yandex opening offices and data centers in Iran, but these plans ultimately did not come to fruition. When Yandex was temporarily blocked by Iranian authorities in March 2016, the subject was raised in a meeting between Vaezi and his Russian counterpart, and both parties agreed on efforts to remove the ban.

In October 2017, the Russian app-based taxi company Maxim received licence from Iranian authorities to operate in Iran. This move was surprising to many, as the Iranian app-based taxi company Snapp has been growing in popularity in Iran, and authorities had typically been protectionist when it comes to nurturing locally developed tech companies.

ICT Diplomacy

The financial and business global activities Iran has undertaken have highlighted the strong involvement of foreign parties in the development of SHOMA in Iran. However, the Iranian ICT Ministry’s activities in recent years have gone beyond the projects named above. Former ICT Minister Mahmoud Vaezi, and the newly appointed Minister Jahromi have been active in global ICT policy-making organisations and vocal about establishing long term alliances with neighbouring and emerging ICT powers.

Under Vaezi and Jahromi, Iran has publicly labeled the ITU and WSIS as important institutions, while the government has become increasingly vocal about participation. While Vaezi has been one of Rouhani’s most prominent allies in negotiating with the US on issues including Iran’s nuclear programme, he also spent much of his tenure as ICT Minister allied with Russia and other anti-American actors, joining them in campaigning to reduce the influence of the US on the global governance of the internet. For example, in October 2015, Vaezi used his Instagram account to say he had been in talks with countries, including Russia, to discuss how to use the UN General Assembly’s high-level meeting in December 2015 to break the US monopoly over internet governance.

In addition to this, Vaezi was also heavily involved in seeking bilateral partnerships and private sector investment abroad. Since the JCPOA was agreed, and up to the end of his term as ICT Minister, he held over 50 significant international meetings with a range of

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regional and global parties. Significantly, he has been very public about his attempts to ease the way for further cooperation with Nokia, Samsung, Ericsson, and Huawei. In the absence of Foreign Minister Mohammad Javad Zarif he often welcomed foreign officials to Iran in his capacity as Head of the Committee to Build Bilateral Trade with Turkey, Azerbaijan and Russia.

Iran’s Regional ICT Aspirations

As Iran’s rhetoric and public engagements point at a desire for greater economic influence in the MENA region, it is imperative to compare Iran’s market and readiness with its neighbours, and those with similar demographics and economic power.
According to EURid, only 5% of global popular internet content is hosted in the MENA region. However, the report by EURid states that Iran and Turkey appear to have strong local hosting infrastructure and local markets. In the case of Iran, forcing Iranian websites to be hosted in-country could be the reason there is a higher percentage of domestically hosted content in comparison to its neighbours.

A June 2016 report by the global consultancy firm Mckinsey claims that Iran’s ICT sector has not developed as fast as many of its peer countries (Brazil, China, Egypt, India, Malaysia, Mexico, Nigeria, Russia, Turkey, and Vietnam). According to the report the ICT market in Iran has a revenue of about $8 billion which is about half the size of Turkey’s and one-third the size of Mexico’s. The report also states that the average mobile data consumption per person likewise trails that of a number of comparable countries, partly due to lower mobile internet speeds and despite low mobile data prices. Iran also has a software industry servicing mainly local clients, and its IT services market is also small and highly localised, but with a potential to grow further as it reconnects to the world economy.

In comparison to its neighbours and other regional countries, Iran enjoys a high level of access to mobile phones, and mobile internet penetration is high. According to a report published by GSMA from 2017 Iranian mobile phone ownership is significantly above the regional average.

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This high level of mobile phone ownership has allowed the Iranian public to take advantage of investments in mobile network infrastructure in recent years. At the same time, 33% of the population have gained access to the internet via their mobile phones; a number that GSMA predicts will rise to 44% by 2020. Such a high number of mobile internet users explains the recent waves of innovation in Iran seeking to take advantage of this emerging market.
The Future of ICT in Iran

The growing involvement of the global private sector in Iran and the growing global partnership between Iran and other governments demonstrates that despite rhetoric from some hardliners, the development of SHOMA and the simultaneous pursuit of an isolationist ICT policy are not possible. The last few years have demonstrated that despite the challenges they face, the Iranian government and entrepreneurs are very keen to attract foreign investment in Iran.

However, remaining sanctions on Iran have proven an obstacle for some investments inside the country. Similarly, the aggressive rhetoric from President Donald Trump is likely to slow down the level of investment which headed towards Iran after the optimism of JCPOA. But these are not the only challenges for tech companies looking to invest in Iran. The intrusive and aggressive rulings compromising the online privacy of Iranian internet users and businesses is likely to deter some investors from moving into the Iranian market.

In addition to hostile relationships with the US and intrusive privacy policies, Iran's hostile relationship with some of its neighbours is likely to challenge Iran's ambitions to become a regional ICT hub. While burgeoning relationships with countries such as Oman and Armenia have demonstrated Iran's potential to act as a regional ICT leader, the growing tensions with some Arab GCC neighbours and the historic conflict with Israel limits Iran's opportunities to expand in the region.

Iran's current successful partnerships with foreign governments, and its ability to attract foreign investments from global companies and the outlined outlook provides human right advocates with some challenges and opportunities too. Although internet advocates celebrate the expansion of connectivity in Iran, they must monitor the nature of collaborations with foreign governments and companies. Internet freedom advocates must put pressure on private companies to make the economic and developmental case to Iran for ditching its intrusive data hosting and privacy policies. Iran's realisation of its vast potential to be a leading player in the ICT sector regionally and globally could lead to privacy and security policy reforms which open the door to further collaborations and investment in the country's ICT sector.
The End of Net Neutrality in Iran

In recent years, the development of Iran’s National Information Network (SHOMA) has facilitated the mass expansion of internet access across the country (the government states that 72,000 villages have been connected since 2013), and substantial leaps in average speeds. Under the SHOMA programme, domestic and international traffic have also been separated – although such a move has legitimate justifications (increasing service quality, optimising connectivity and reducing transmission costs) Iranian authorities have recently introduced a number of regulations that will formally unravel network neutrality in Iran, and could potentially dissuade users from accessing content from the global web.85

In this chapter, we offer an in-depth assessment of the new regulations, and explain how fresh measures supposedly designed to expand access and cut tariff costs may end up driving people away from global content, and even slash usage rates of circumvention tools such as VPNs. There exists the real possibility that Iran’s new wave of ‘nudge censorship’ could prove to be the most effective one yet.

Tariff Differentiation // A Threat to Internet Freedom

At a meeting with government officials on June 12 2017, Supreme Leader Ayatollah Seyyed Ali Khamenei delivered a speech outlining his vision for the future development of the internet in Iran.

“This control does not mean that we should deprive our nation access to cyberspace. This is not what I am saying. Today, an avalanche of correct and false information is engulfing our internet users. They are giving false and harmful information to them. Well, these things are engulfing our internet users like an avalanche. Why should we allow this to happen? Why should we allow things which are against our values, against our well-established principles, and against the main constituents of our national identity to be developed inside the country by the people who bear malice against us? This should not be allowed.

You should do something to help everyone benefit from the advantages and good aspects of cyberspace. You can also increase internet speeds. These necessary tasks can be carried out, but the things which are to your disadvantage, and to the disadvantage of your youth and public opinion in the country should be controlled. This is a very important

point. This task should be accomplished. Therefore, the issue of the National Information Network is very important.  

No other recent development in Iranian cyber policy has embodied Khamenei's vision of the internet as much as the recent announcement of price differentiation for Iranian internet users. In February 2015 it was announced that as a result of the National Information Network's (SHOMA's) development, operators and ISPs must cut the cost of browsing content hosted inside Iran by 50%. In an interview with the Mehr News Agency on May 5 2017, Hossein Fallah-Joushghani from Iran's Communications Regulatory Authority (CRA) announced that most Iranian ISPs, with the exception of HiWeb and the Telecommunication Company of Iran (TCI) had complied with the new regulation, but that Rightel was the only mobile provider that had so far done the same. According to Fallah-Joushghani, the CRA had sent formal warnings to the other two Iranian mobile phone operators MTN IranCell and MCI.

This significant slashing of internet tariffs has been celebrated by officials, particularly Rouhani's administration. It has been highlighted by officials as a triumph for the National Information Network (SHOMA) and a measure which will vastly benefit Iranian entrepreneurs, academic and average internet users.

However, a closer look at the details of the policy and its implementation reveals that far from being a benefit to Iranian internet users, innovators and academics, the tariff changes represent an assault on internet freedom in Iran. The new system damages media diversity and economic innovation by sacrificing users' privacy, and by placing an unprecedented amount of power in the hands of internet providers without consumer oversight.

Barriers to Media Diversity and Innovation

On April 4, 2017, Iranian mobile phone operator MTN Irancell announced that in accordance with the policies of the 'Resistance Economy' and with the aim of supporting the creation of local content it has halved its pay-as-you-go tariffs for accessing domestic content. At first glance, while violating the principle of net neutrality, Iran may just be passing savings to consumers that choose to browse domestic content. However, a closer look at the proposal reveals that in practice the policy may disadvantage new innovators and seriously harm media plurality in Iran. While the vast majority of Iranian websites are

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hosted inside Iran, authorities have announced a selected list of over 500 websites which they claim are the most popular domestic sites.91

The list—extracted in June 2017—is a mixture of cultural news, governmental and private sector websites. In terms of culture and news agencies the list demonstrates a clear discrimination against newspapers published in Iran, and favours governmental or semi-official news agencies by giving consumers a 50% discount for browsing them. For example, sharghdaily.ir, according to Alexa, is the 526th most popular website in Iran and eghtesadnews.com is 75th, but neither of these websites are included in the list of top 500 websites according to Iranian authorities. However, other websites such as ttbank.ir, which is ranked at 1,181th, are listed. Similarly, snapp.ir does not appear on the list despite being ranked higher than ttbank.ir at 1,068th on Alexa.

Some internet providers have added different websites to their low-tariff list, for example Shatel has included websites such as tablet.ir (2438th according to Alexa), despite them not appearing on the official list issued by the CRA.

This arbitrary classification creates a fundamentally uneven playing field for Iran's online ecosystem, and systematically favours government agencies over independent media outlets. While the policy is celebrated by officials as a measure to boost local innovation and support new businesses, by making it more expensive to access new Iranian websites and apps than government-affiliated websites or large domestic companies, Iran is putting local entrepreneurs at a serious disadvantage.

### The End of VPNs?

In May 2017, MTN Irancell announced that consumers using Virtual Private Networks (VPNs) to access websites, either to bypass restrictions, or to browse locally hosted websites anonymously, will not receive a 50% discount when visiting domestic websites.96 This announcement was made by MTN Irancell after a tide of fury from consumers who bought discounted packages in the hope of discounts applying even when browsing the internet using VPNs.

According to Iranian Cyber Crime Laws, using VPNs is not a crime, and Iranian users are allowed to use VPNs. However, this policy will price out many Iranian internet users from accessing the web using VPNs.

The effect of price differentiation on VPN users is so unclear that even Parliament sought clarification on the matter from MTN Irancell. On May 7 2017, the pro-reform MP

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93 Many of the top 500 visited websites by Iranians are not Iranian websites.
Ramazanali Sobhanifar stated that “based on talks with officials at MTN Irancell, it has been made clear that this discount will be given to only those that are using the local internet, and wherever a domestic IP address is not used, the discount will not be awarded.”

**ISPs – The New Policymakers?**

The examples above illustrate the diversity of opinion among ISPs and the lists of local websites with the 50% discount included. The confusion caused by MTN Irancell's policy toward VPNs demonstrates the dangerous power allocated to ISPs and mobile operators with the implementation of this policy.

It is also unclear how other ISPs have tailored their policy or pricing to reflect this reduction in tariff charges. While some ISPs such as Shatel have publicised their new prices, many ISPs have not made any public announcements regarding the changes which Communications Regulatory Authority (CRA) believes it will be reflected in consumers bills. For example it is unclear how ADSL service providers ASRE Telecom and Sepanta will adjust their prices to reflect this new policy.

The unscrutinised power of ISPs and internet providers is a particularly important issue in Iran as many are supposedly privately owned and motivated by market factors, but in reality have close links with security forces such as the Islamic Revolutionary Guard Corps (see our March 2017 IIIP report), or financial intuitions close to Iran's Supreme Leader. This policy has opened the door for ISPs to play a greater role in the governance of the internet in Iran without being governed by democratic institutions or with the oversight of consumer rights groups.

It is also unclear whether ISPs will be allowed to raise the price of non-discounted traffic. The current guidelines appear to only request that operators only halve the domestic tariff, and it has not barred them from regaining the financial loss by increasing prices for accessing non-domestic content and other services.

**The Making of an Unequal Internet**

As demonstrated above, the policy of price differentiation has proven not to be beneficial for Iranian cyberspace and instead has an overwhelmingly negative impact upon net neutrality in the country.

Iranian authorities are not the first to attempt to tighten their control on the free flow of information by offering free or discounted internet to users. When Facebook was set to reach an agreement with Indian authorities to provide free access to a selected few corners of the internet through their ‘Free Basics scheme, a grassroots campaign opposed the move, which was seen to hand unnecessary power to Facebook and the Indian authorities.

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to redefine what the internet is.\textsuperscript{99} The move to provide limited internet to a section of society based on their economic status was criticised widely by Vijay Shekhar Sharma, founder of payments app PayTM, claiming “it’s poor internet for poor people.”\textsuperscript{100}

Such comments also apply to the Iranian context. This Rouhani government policy will likely steer poorer users towards cheaper state-produced content. Many urban users may not give up their right to browse a diverse range of online sources, or their right to use VPNs. However, with the expansion of internet connections to more than 27,000 villages under President Rouhani, it is important that newly connected Iranians are not offered a second-class service. The current system of tariffs will create a two-tiered of internet users in Iran, thereby threatening the cohesion of Iranian society as a whole.

As it stands this policy will not create a more favourable environment for innovation, national cultural diversity or greater access to the internet. Instead it empowers government-backed news and media agencies, closes a section of Iranian internet users to new and upcoming startups, and will give even greater power to ISPs and mobile phone operators without any form of democratic oversight.

Telegram’s Ongoing Transformation of the Internet in Iran

It is impossible to discuss internet policy in Iran without looking at the role played by the messaging app Telegram, from domestic debates over its accessibility in Iran to international scrutiny over collaboration between the app and Iranian and Russian authorities. Telegram has been seen as a key ingredient in President Rouhani’s recent electoral victories, while hardline elements of the Iranian establishment view it as a tool for the distribution of immoral and extremist content.

We will be looking at the sudden and impressive growth of Telegram in Iran, how Iran’s netizens use it, and how it has changed socio-political discourse in Iran. We will also discuss what the future may hold for Telegram in light of the pressure conservatives and hardliners have placed on it regarding accessibility.

The Political Debate

As Iranians downloaded Telegram for the first time in June 2015, many shared a joke saying that “the largest exodus of Iranians in the 21st century is the exodus from Viber to Telegram”.

After weeks of disruption to Viber’s services, and contradictory announcements over its filtering, the government blocked it altogether. Viber was a popular messaging app in Iran that also provided a free Voice over IP (VoIP) service for domestic international calls between two Viber users. However, accusations of the Viber CEO’s supposed ‘Zionist’ affiliations gave the Committee to Determine the Instances of Criminal Conduct (CDICC) the excuse it needed to block the app.101

This phenomenon of digital nomadism isn’t anything new to Iranian internet users, who have been forced to up sticks and move onto new communications platforms on numerous occasions. For example, Viber itself became widely populated as a response to the blocking of WeChat in 2013. As a result, Viber remained a fixture on the Iranian ICT news landscape from 2013 – 2015. After the government blocked Viber in May 2014, Telegram became the next hot destination for Iranian users, with its popularity spreading rapidly through word of mouth.

The mass exodus of Iranians to Telegram has led to an ongoing public debate between reformists and hardliners sitting on the CDICC. In October 2015102, then-ICT Minister Mahmoud Vaezi insisted that members of the CDICC wanted to block Telegram in Iran, but...
asked for more time to negotiate cooperation with Telegram. He also added that Telegram had already complied with government requests by removing a number of channels – a statement that triggered widespread concern among internet freedom commentators.

Telegram’s CEO Pavel Durov has always been dismissive of any cooperation with Iran and has never confirmed any level of talks or cooperation between his company and Iranian authorities. However, in July 2017, in response to claims from Vaezi that Telegram had moved its servers into Iran, Durov published a blog post in which he denied the claims. In it, Durov claimed that Telegram has no servers in Iran, but revealed that Vaezi probably referred to one of the CDN [Content Delivery Network] caching nodes that Telegram rents from a global CDN-provider. These nodes cache publicly available data locally and are used in many places of the world where Telegram does not want to install its own servers (e.g. Turkey, Iraq, Iran, India, Indonesia and Argentina). While there is no evidence of any further collaboration between Telegram and Iran, Durov’s blog suggests that the Iranian government has the ability to interrupt Telegram services in Iran, and to access a limited amount of information about Telegram users in the country.

Telegram: Media Diversity and Political Campaigning

Given its huge growth – coinciding with significantly expanded internet penetration in Iran – it is apparent that Telegram has become more than a simple replacement for Viber, WeChat, and WhatsApp.

One of the main features of Telegram is the ability to create public channels, within which admins can share content with group members. The growth of mobile internet penetration in Iran means that channels provide a convenient way to receive curated content. In this regard, Telegram has provided a means for users to overcome Iran’s stringent internet controls.

Vahid Online – whose blogs are filtered in Iran – shares content to more than 205,000 members of his Telegram channel. One of the main attractions of Vahid Online’s channel is that he shares his content from Twitter, allowing Iranians to bypass the filtering of Twitter without having to use circumvention tools.

Similarly, Persian-language news channels based outside of Iran use the app to bypass internet controls and distribute content. For example, BBC Persian has around 1,150,000 members on its channel, and much of the content it shares is viewed by as many as half a million Telegram users.

Political campaigners and activists in Iran have also made use of Telegram to magnify their influence. 2016’s parliamentary elections saw pro-reform activists capitalising on the platform’s bot technology. During the campaign period, fearing uneven access to public media and the possibility of harassment against campaign offices, activists used Telegram channels and bots to distribute a list of candidates endorsed by leading reformists. This so-called “List of Hope” had its own bot created by Rouhani’s supporters on Telegram, which allowed Iranian users to find the names of reformist-endorsed candidates in their constituency. This political investment by pro-reform activists grabbed the attention of a number of spectators, who commented on the possible impact on Iranian political discourse as a result of Telegram’s growing popularity in Iran.

Iranian government officials, ministers, and media outlets also have an active and popular presence on Telegram. In order to catch up with the mass exodus of Iranian internet users to Telegram, Iran’s state broadcaster, Islamic Republic of Iran Broadcasting (IRIB), also started a channel. Initially, the IRIB had an interesting relationship with Telegram, in that it was the only online platform that IRIB programmes would promote. However, guidelines issued by IRIB management in June 2016\textsuperscript{105} stated that IRIB programmes should not advertise it. This means that although the popular football show ‘90’ has more than 900,000 members in its Telegram channel, the channel cannot be mentioned on the show itself.

\textsuperscript{105}Fars News Agency, (2016), retrieved 09/04/2018, \url{http://www.farsnews.com/13950326000776}
New Spaces for Marginal Communities

Iranian Telegram channels often reflect the cultural and geographical diversity of Iran. With channels dedicated to minorities and places outside largest cities, many admins find themselves in the position of distributing information to small but targeted groups of people. The ease of maintaining Telegram channels, and the easy access for anyone with a smartphone, has created a low entry barrier for many ethnic minority groups online. These channels, although low in membership numbers, often act as a resource for learning local languages, sharing regional music and folk dances, and other niche community-focused topics.

Other minorities, including the LGBTQ+ community, have created channels offering social networking opportunities, entertainment material, and sexual and mental health support to their members. While these groups understandably maintain a lower public profile, they often play an important role in allowing marginalised groups to access information often not available in Persian. However, such activities still bear a high level of risk in Iran and have received a heavy-handed reaction from authorities. On 14 September 2017, six Telegram channel admins were arrested in the city of Ardebil on charges of promoting homosexuality using the app.

The Telegram Economy

With conventional social media marketing closed due to international sanctions and the criminal risks associated with using platforms such as Facebook, Telegram’s popularity in Iran has led to the birth of a market based on the app. Companies like Mobodid act as the middleman between traders and popular channel admins to place paid-for content in channels. Mobodid, which is fully licenced in Iran, claims to have credible names such as AsiaTech and Saman Bank among its clients. Their website also offers Telegram channel admins payment for posting advertisements relevant to their channel subject.

These activities quickly caught the eye of Iran’s media agencies. In a report dated to December 2015, Mehr News Agency interviewed Reza Rad, admin of the popular Telegram channel “GizMizTel”, which currently has over 1,700,000 members. Rad claimed that each post advertising local business on his channel would cost between 5,000,000 (132.5 USD) to 6,000,000 IRR (159 USD).

Other financial initiatives include efforts to make ‘boutique’ and exclusive social networking sites by creating channels and bots which require a fee to use. Tooba is a company based in Iran that charges users to access their bot, which in turn allows them to view the profiles of individuals signed up to their matchmaking website.

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However, it should be noted that despite the growing Telegram-based economy, hardliners and anti-Telegram officials have not sought to crack down on key market players, or else apply other forms of pressure on them.
How has Telegram changed the internet in Iran?

In the first days of protest after the disputed presidential election of 2009, pro-reformist activists used the slogan of “each citizen a media” to encourage protesters and activists to use their smartphones and document and share evidence of police brutality. This mass citizen journalism and activism using platforms such as Twitter, Facebook, and Iranian news board Balatarin – the Iranian version of Digg – was a natural progression for many young Iranians already active within Iran’s blogging sphere.

Blogging from the early 2000s, and later microblogging on Twitter, created an online public sphere where ideas and opinions were shared and discussed among a small section of society. Those who had early access to the internet in Iran used it as a tool to fight barriers between citizens set by the Iranian authorities since the 1979 revolution. However, the segregation of internet users into Telegram channels that only match their interests threatens these online public spheres. Many Iranian Telegram users are unaware of Telegram channels which reflect political and social values opposing theirs. Be it a pro LGBTQ+ channel or religiously conservative channel, by sharing content only to their members, hidden away from search engines and the public, Telegram changes the experience of Iran’s netizens depending on their interests and political outlook. The rise of exiled TV host Mohammad Hosseini illustrates this. Hosseini, who has 121,180 members on his channel, has started the “re-start” movement, which has encouraged Iranian youth to damage government property. In recent weeks videos of Iranians damaging government

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property in response to Hosseini’s call shocked many, as they were completely unaware of his popularity, and his call for direct action.

Moves from ‘traditional’ social networking, microblogging platforms, and media websites to Telegram channels has also transferred significant power to Telegram channel admins. Channels with close to a million members have no arrangements for users to express their views, and members have no way of interacting with each other. The power of what is disseminated, when and to whom, lies with admins, and most Telegram users have been reduced to mere consumers.

Yet the surge in Telegram’s users is testimony to what it offers: unfiltered content, on a platform freely available in Iran, that is available on smartphones. It must be acknowledged that such accessibility may be effective in helping to reduce the gap that exists between those with access to fixed internet and those with access only through smartphones.

The Future of Telegram

Given Iran’s political landscape, and the the opaque nature of the filtering body CDICC, is difficult to predict what the future holds for Telegram in Iran. However, looking at the current landscape of Iranian ICT policy makers and the undeniable importance of of the platform, we believe there are three potential scenarios for its future:

The first possibility is a status-quo. Rouhani and his team will continue to publicly defend Telegram against hardliners, but close down selective channels through reporting to Telegram. Hardliners will also continue to arrest and harass admins of political pages, and put pressure on pro-reform channels at the time of elections.

The second scenario would see Telegram being blocked. Although Rouhani and his ministers have been using their influence in the CDICC to stop such a scenario, it is possible for the judiciary to unilaterally seek to use legal procedures to ban Telegram in Iran. In such an event, it is possible that many would make use of circumvention tools to bypass filtering. However, past experience shows that Iranian users have no qualms in migrating to unfiltered apps, essentially making filtering pointless.

The final scenario, which may be closest to the position of Rouhani and his allies, is allowing Telegram to operate under current rules, but creating incentives for Iranian internet users to use domestic apps. This would be done with the hope of reducing the significance of Telegram. Evidence of this happening comes in the form of the recent guidelines for messaging apps issued by the Supreme Council of Cyberspace (SCC). As part of this, only domestic messaging apps can offer financial transaction services. The Iranian government could also provide further incentives by offering cheaper tariffs or Internet Protocol Television (IPTV) provisions to domestic messaging apps.

Conclusion

Telegram has grown to be the face of the internet for many Iranian internet users and this has posed some difficult questions for authorities. The unexpected growth of the platform in the face of Viber being filtered has brought into question the effectiveness of Iran's internet controls.

If we are to assume that Telegram is not going to be filtered, or even at the event of its filtering it will not be abandoned by a large section of Iranian society, then we must focus on how it is changing the internet landscape in the country. This includes tackling how Iranian netizens can reclaim public spheres, and remove some of the political power bestowed on channel admins.
Iranian ICT in Numbers

Statistics

- February 8: Asreertebat\textsuperscript{110}, which is a weekly ICT magazine, has published an article about the latest status of circumvention tools in Iran. The following list summarises the points made in the article:
  - On average, each circumvention tools seller offers at least 5 to 6 circumvention tools.
  - There are four specific circumvention tools that are very popular among Iranians, two of which require payment from users.
  - Around 11 million Iranians are using Facebook and Twitter.
  - By assuming the price of each VPN is around 50,000 IRR (1.5 USD), then Iranians spend around 275 billion IRR (8.5 million USD) each month on tools to bypass internet censorship in Iran.\textsuperscript{111} (Source)

- April 3: ISNA news agency published new figures relating to Iran’s ICT sector, with statistics updated as of 21 December 2016:
  - Broadband users: 9,318,943.
  - Active SIM cards: 80,520,249.
  - Active landlines: 30,505,000.
  - Mobile penetration rate: 101.05%.
  - Landline penetration rate: 38.52%.\textsuperscript{112}

- April 11: According to Mehr News agency there are 871,743 domains registered, and in comparison to previous years, this has increased by 117,000. By the end of March 2016 there were 74,500 registered websites. According to the report there are currently 862,888 .ir domains active in Iran:
  - co.ir 3,942
  - ایران 2,008
  - ac.ir 1,506
  - gov.ir 274
  - sch.ir 323
  - org.ir 319
  - id.ir 443
  - net.ir 40\textsuperscript{113}

- 16 July: ICT Minister Mahmoud Vaezi unveiled the third phase of the National Information Network (SHOMA) at an event hosted at the Tehran offices of the Mobile Telecommunication Company of Iran (MCI). The event was attended by a number of high profile Iranian officials, including the head of the Communications Regulatory Authority (CRA), the CEO of the Telecommunication Infrastructure Company, the CEO of the Telecommunication Company of Iran, the head of Sharif

\textsuperscript{110} Asreertebat Weekly ICT Magazine, \url{https://asreertebat.com/}
\textsuperscript{111} ITNA, (2017), retrieved 16/04/2018, \url{http://bit.ly/2HDSZ3q}
\textsuperscript{112} ISNA, (2017), retrieved 16/04/2018, \url{http://bit.ly/2H3l82E}
University of Technology and the CEO of the National Iranian Gas Company. The MCI unveiled 11 projects that form part of the third phase of SHOMA:

- Development of the national wireless network in order to expand access to SHOMA. The project will develop 130,860 new sites for 2G networks, expansion of 3G networks in 1,042 cities and 970 villages and the development of 4.5G mobile networks in 710 cities.
- Supporting the needs of SHOMA by expanding IP Backbone projects and the expansion of fiber networks at 8,220 sites.
- Expansion of the CDN network in Iran.
- Signing an agreement with Nokia for research and delivering 5G services in Iran.  

- 12 August: Iran’s Cyberspace Institute has claimed that there are over 555,000 Iranian public channels on Telegram, within which there are over one billion posts. The institute added that of these channels 20,000 have over 5,000 members, and 88% of the posts on Telegram channels are original content.

- 18 September: Deputy of the National Center for Cyberspace Amir Khorakian has claimed that 60% of internet traffic in Iran is used for communicating via Telegram. He added that Telegram has close to 40 million users in Iran, and the peak time that people use it is between 2200 and 0100.

- 24 November: According to the latest figures published by the National Center for Cyberspace there are 678,257 Persian language channels in Telegram, and these channels receive 2,000,000,000 visits every day. According to the figures, of these channels 228,309 are updated on a daily basis. The report also claims that in 24 hours on average 2,600,000 messages are published in the channels.

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The eruption of anger and frustration on the streets of Iran at the end of 2017 constituted the largest and most widespread demonstrations since the post-election unrest of 2009. Although the scale of the protests appeared to catch authorities by surprise, this was exactly the kind of phenomenon that Iran’s ICT infrastructure has been designed to contain and manage over the past 8 years.

Iran has been no stranger to political unrest in recent memory. In 2009, the unrest in the aftermath of Mahmoud Ahmadinejad’s disputed election victory captured the world’s attention, just as ten years previously the 1999 Tehran student protests highlighted dissatisfaction of student movement in Iran with the state of freedom of expression. But although they did not always grab the world’s attention, there have been numerous incidences of economic unrest emerging over the past few years, as Iranian citizens vented
their frustration at the sluggish and uneven pace of economic recovery under the Rouhani administration.

Nonetheless, many commentators – whether based in Tehran, London or New York – were taken aback by the rapid pace of events in December 2017 and early January 2018, when protests spread from the city of Mashhad to around 72 cities and 75 towns, and villages across Iran. This was a revolt of the forgotten Iran – the ‘left behind’ citizens who reside in towns and small cities that are unknown to many Iranians, let alone to international observers.

These protests appeared to have been without leadership, spreading organically across the country as momentum continued to build behind the protestors. Given this dynamic, many baffled commentators began their appraisal of the movement by examining how Iran’s digital media ecosystem has worked to shape the protests and the social movements around it.

Unlike the widespread protests in 2009, where the reform movement’s political leadership was backed by leading reformist newspapers and their mainstream media outlets, in this cycle of unrest it quickly became clear that the protestors had no clear voice in the mainstream media landscape. Instead, attention turned to public Telegram channels, which had become extraordinarily popular and influential media outlets in the absence of widespread content filtering on the platform.

Temporary Measures? // The Filtering of Telegram

Soon after protests first started to sweep the country on December 30, and clashes between protesters and security forces intensified, Iranian ICT Minister Mohammad-Javad Azari Jahromi tweeted a direct appeal to Telegram CEO Pavel Durov imploring him to block Amad News, a public channel that allegedly instructed protestors to employ violent resistance against state security personnel.118

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118 A Jahromi, Mohammad-Javad, 30/12/2017, Twitter Post, https://twitter.com/azarijahromi/status/947098403531640832
A prompt response from Telegram saw the channel deleted on the basis of Jahromi's allegations. Amad News website quickly started a second channel, named AmadNews1, though it was quickly deleted by Telegram on the basis that it was a mirror of the original channel. Finally, Amad News’ admin rebranded the channel and opened a new channel under the name ‘Sedaie Mardom’, or ‘People's Voice’ (@sedaiemardom), which attracted hundreds of thousands of followers within days (its membership was sitting at just under 1,300,000 as of January 11, 2018). It appears that after providing reassurances to Durov that the channel admin responsible for posting the messages had been removed from the team, the channel was allowed to continue operating. \(^{119}\) Subsequently, it appears that this decision was used as the basis for Iran's National Security Council – a subcommittee of Supreme National Security Council – to ban Telegram in Iran.

\(^{119}\) Durov, Pavel, 31/12/2017, Twitter Post, [https://twitter.com/durov/status/947422726322565121](https://twitter.com/durov/status/947422726322565121)
On 31 December 2017 many Iranian users started reporting problems with using Telegram and Instagram. And on January 1 Iran's ICT Minister claimed in a tweet that the filtering of these services was only a temporary measure. Jahromi also named the 'National Security Council' as the body responsible for issuing the order to block the platforms. However, despite his claim that the filtering of these apps was not undertaken by the ICT Ministry, on January 5 the Tehran Friday prayer leader Seyyed Ahmad Khatami thanked Jahromi for his “management” of cyberspace during the protest.

As well as filtering Telegram, Iranian users started reporting major disruptions in accessing servers hosted by the New York-headquartered hosting company DigitalOcean, disruptions which appear to have been implemented by ISPs inside Iran. DigitalOcean's services are used by some VPN providers, developers, and start-ups inside the country.

Supplementing these 'traditional' means of censorship by content filtering, we witnessed some evidence of the slowing down of international internet traffic at international gateways. Differentiating between domestic and international traffic has long been a demand of many backers of the National Internet (SHOMA) in Iran. The network monitor BGPmon noted in a tweet that international traffic temporarily dropped by nearly 50% on January 1. Although the incident only lasted for 12 minutes, the timing of the event does

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120 A Jahromi, Mohammad-Javad, 01/01/2018, Twitter Post, [https://twitter.com/azarjahromi/status/947767138596646912](https://twitter.com/azarjahromi/status/947767138596646912)
121 Jamee Farda, 01/01/2018, Twitter Post, [https://twitter.com/jameefarda/status/947797043128434688](https://twitter.com/jameefarda/status/947797043128434688)
124 BGPmon.net, 01/01/2018, Twitter Post, [https://twitter.com/bgpmon/status/947871872619655170](https://twitter.com/bgpmon/status/947871872619655170)
suggest that traffic was being intentionally throttled, and that the state has the capacity to limit international traffic as it chooses.

A New Player? // The Surprise Unblocking of WeChat
In a stark contrast to their filtering of Telegram and Instagram, ILNA News Agency reported that on January 4 the CDICC lifted the ban on the Chinese messaging and social networking app WeChat.125 WeChat was previously filtered by Iran's Filtering Committee in December 2013.126

One of the possible reasons that Iran unblocked WeChat could be connected to its close relationship with the Chinese government, that has influence over WeChat servers. It is possible that the Iranian government negotiated a deal with its Chinese counterparts and WeChat to allow Iran to remove and block any WeChat-based content.

Alternatively, the move could have been undertaken as an implicit threat to Telegram, to signal that if it failed to cooperate with the government then there are other service providers that could be brought into the market.

Disruption // VPN Availability
As noted above, Iranian internet users have had problems connecting to the international internet, and have been forced to use different circumvention tools and VPNs to gain access to information unimpeded. In a Twitter poll, digital security expert Amin Sabeti asked Iranian users “Have you had any issues regarding internet [connectivity] and speeds since the protests in Iran?”.127 Of 403 users who responded to the poll, 59% stated that they had, whereas 24% said they had encountered no issues.

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127 Sabeti, Amin, 31/12/2017, Twitter Post, https://twitter.com/AminSabeti/status/947292045445681152
According to tests conducted by Small Media in Iran on 11 January 2018 (Identified Vendor: AS51026), 7 circumvention tools/VPNs were noted to be functional, whereas 9 were unavailable.

The Impact of Filtering Policies

Although the momentum of events appears to have slowed, there seems to be no clear link to the government’s filtering policies. Indeed, the limitations imposed on internet access were matched by a brutal and heavy-handed response to protestors on the streets. To assume that internet disruptions led to the evaporation of street protests one must assume that either the protest originated online thanks to a widely disseminated campaign, or else it was coordinated by a core team using communication apps such as Telegram. Despite Amad News’ (and later Sedaie Mardom’s) role in reporting – and ostensibly cheerleading – the uprising, there is no evidence to suggest they, nor any other group actively coordinated the movement online.

Indeed, perhaps the most challenging aspect of the unrest for the government was its wide geographic distribution. Although the spark was lit in Mashhad at a large protest dominated by economic demands, unrest spread like wildfire to small towns and provincial cities across the country, where mass youth unemployment and rising poverty have fostered widespread public frustration with the status quo. Our assessment is that this frustration erupted organically in late December, and that the slowing momentum of protests is
indicative of their uncoordinated nature, lack of political leadership, and a heavy-handed response from state security forces.

On the issue of leadership, it is unclear where the protesters on the ground got most of their information from, but the fact that unrest had rapidly spread to smaller towns perhaps made social networks and digital communications tools less instrumental. For example, the southern city of Izeh in Khuzestan Province has a population of around 100,000 people, and yet was the site of large protests on December 31, 2017. As Ali Reza Eshraghi notes, much of the unrest was deeply connected to localised grievances – local mobilisation and local action were at the root of protests in places like Izeh. Protesters in smaller communities such as this might have benefited somewhat from using messaging and social networking platforms, but are less reliant than inhabitants of large cities with weaker local organisational networks.

Getting information out of Iran, although complicated by the government’s information control policies, was not impossible. Nariman Gharib, social media specialist & cybersecurity analyst at the London-based broadcasting network Manoto TV said that: “The blocking of Telegram and the disruption of internet connections did not have a significant effect on our communication with citizen journalists and our viewers in Iran, as many used alternative messaging apps. We also provided alternative methods of contacting us.”

Iran’s throttling of internet access, disruption of circumvention services, and filtering of social media platforms constitute a serious violation of citizens’ rights to freedom of expression and information, and should be roundly condemned. But it is unclear whether, despite their reach, the state’s filtering policies have proven entirely effective at restricting information flows inside the country. Banned channels such as Sedaie Mardom quickly regained their user base once re-established, media content continued to be produced and shared, and (as we will demonstrate shortly) the use of circumvention tools continued to skyrocket.

The ‘Telegrampreneurs’ // Economic Impacts of Filtering

Although government filtering policies had an ambiguous impact upon the course of the recent unrest, their effects were clearly felt by businesses. Disruption of access to secure hosting companies such as DigitalOcean crippled the operations of the tech developers and start-ups who are dependent upon them to run and maintain their businesses. Meanwhile, the filtering of Telegram affected thousands of businesses that use the platform to advertise, sell, and distribute their products.

Keen to take a public stand against the filtering of Telegram, a number of Iranian entrepreneurs launched a Twitter account named ‘Iranian Telegrampreneurs’ (@telegrampreneur). The account claims that 1 million jobs could be affected by the

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disruption of the service, and published a list of 50,000 Telegram channels that are used by Iranian businesses.\textsuperscript{129}

As well as tweeting at Iran's ICT Minister Jahromi asking him to lift the filtering of Telegram, the account shared messages it received from business owners who have been affected by the disruption. Here are some of their stories:

Case #1 // January 1, 2018 – “Hello. I have a [Telegram-based] shopping channel and I had made a lot of sales [before the filtering] – about 200 people had transferred money to my account. Some of them have managed to connect [to Telegram] using anti-filtering tools, and have given me their addresses so I can send their goods, but a lot still remain who I'm unable to contact.

Just by myself I employ 15 admins who aren't in a good financial situation, and they can't get any other work.”\textsuperscript{130}

\begin{figure}[h]
\centering
\includegraphics[width=0.8\textwidth]{case1.png}
\caption{Case #1}
\end{figure}

129 Iranian Telegrampreneurs, 03/01/2018, Twitter Post, https://twitter.com/telegrampreneur/status/948638200578191360
130 Iranian Telegrampreneurs, 03/01/2018, Twitter Post, https://twitter.com/telegrampreneur/status/948620743813742592
Case #2 // January 3, 2018: “I swear on the Qur’an, people have given up. People only had this one pleasure, and now it’s been taken from them. This is not the way [to act]. Instead of filtering [Telegram] they should take action to resolve people’s problems. I sold 70% of my shop’s goods through Telegram, [but] today I had to close my shop and go home... Thanks.”

Figure 21 // Case #2

It appears that the grievances of business owners have been heard by the Iranian government. In their recent comments, both Rouhani and Jahromi have conceded that filtering policies have had negative impacts on businesses in recent days.

On January 3, Jahromi stated that “There is a lot of business and trade that takes place via Telegram, and so as a result we’re following up on its reconnection. However, Telegram is not the only messaging app in the world, and other messaging apps exist as well.”

On January 8, Rouhani took to Twitter to comment on the filtering of Telegram, stating: “Any tool or technology can be misused by some people, but we cannot remain indifferent towards the livelihoods and businesses of people by limiting them permanently. #cyberspace”

It’s difficult to know quite what to make of these statements. On the one hand, Rouhani’s comment about the need to lift restrictions and support businesses seems like an unambiguous statement of his intent to roll back filtering policies in the immediate future. Jahromi’s line is less clear, however. By suggesting that users and business owners might

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131 Iranian Telegrampreneurs, 03/01/2018, Twitter Post, https://twitter.com/telegrampreneur/status/94866478521814784
133 Rouhani, 08/01/2018, Twitter Post, https://twitter.com/Rouhani_ir/status/950311305482817536
want to investigate alternative messaging apps, he implies that restrictions may not be removed fully from Telegram in the short term.

Behavioural Problems // Reshaping User Behaviours

Despite officials’ insistence that the filtering of Telegram is a temporary measure, campaigns rapidly started promoting five leading domestic messaging apps as potential replacements for Telegram – Soroosh, Bale, Gap, iGap, and Bisphone. Reports also confirmed that these apps have seen sharp increases in downloads from the domestic app store CafeBazaar.

On January 3, the Iranian magazine Peivast tweeted that it had seen figures from CafeBazaar that confirms this increase. At the time of writing this report according to CafeBazaar’s public website the those five messaging apps have the following numbers of “active installed” users:

- Soroush // 1,000,000
- Bale // 200,000
- Gap // 100,000
- iGap // 50,000
- Bisphone // 20,000

In a more worrying trend, a number of domestically designed, unofficial fork versions of Telegram such as Hotgram and Mobogram have been using this opportunity to advertise

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Figure 22 // A video clip on Aparat promoted five domestic messaging apps after the suspension of access to Telegram.

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134 Peivast, 03/01/2018, Twitter Post, https://twitter.com/Peivast/status/948518951667093504
themselves as a solution to bypassing filtering. On numerous occasions, Iranian mobile users have received text messages claiming that usage of these domestic fork version is classified under their domestic tariff.

Figure 23 // Iranians were sent SMS messages promoting unofficial Telegram forks.
These apps appear to be able to bypass the government’s filtering of a majority of Telegram channels, apart from a list of blocked channels seemingly provided to them by Iranian authorities. In his analysis, Amir Rashidi noted that apart from blocking users’ access to certain channels, these services also seriously compromise user privacy, as their traffic passes through domestic servers. Telegram CEO Pavel Durov has previously warned users about these unauthorised Telegram forks:

Figure 24 // Telegram CEO Pavel Durov discouraged using unsecure Telegram forks such as Hotgram.

As soon as the internet service disruptions began, many Iranian users started looking for VPNs and circumvention tools that could help them to connect to filtered services. After nearly a decade of experience evading government filtering policies, Iranians are generally well-equipped with circumvention tools provided by global providers.

135 Rashidi, Amir, 06/01/2018, Twitter Post, https://twitter.com/Ammir/status/949545511102578688
136 Durov, Pavel, 29/07/2017, Twitter Post, https://twitter.com/durov/status/891213634248085505
During the recent unrest, a number of international providers removed data restrictions to Iran in order to give Iranians unlimited, unfiltered internet access, including the popular service Lantern.\textsuperscript{137}

Ultimately, however, the most widely-used circumvention tool of the period appears to have been Psiphon. In an interview with Motherboard, Psiphon's Irv Simpson reported that downloads of the app skyrocketed from an average 35,000 - 40,000 per day to more than

\textsuperscript{137} Fisk, Adam, 02/01/2018, Twitter Post, \url{https://twitter.com/adamfisk/status/948028495082405888}
700,000 between December 31 and January 3, accompanied by a ten-fold increase in Psiphon mobile usage from Iran over the same period. Simpson estimated that between 8-10 million Iranians were using Psiphon at its peak.

Indeed, a quick glance at Google Trends data from Iran suggests that Psiphon is far outstripping other circumvention tool providers inside Iran. On January 1 nearly three times as many Iranians were searching the term ‘Psiphon’ (سایفون) as were searching the generic term ‘circumvention tool’ (فیلترشکن). Searches for Psiphon also exceeded searches for Lantern (لتن) and Tor (تور) by a factor of twenty.

Data obtained from Google Trends demonstrates that searches for ‘Psiphon’ far outweighed those for other circumvention tool-related terms during this period, corroborating Psiphon’s claims of a boom of activity over the New Year.

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Data published by The Tor Project, meanwhile, suggested that limitations on international traffic imposed by the government were having a negative impact on the availability of the service via publicly available relays.

Consequently, there was sharp increase in the use of Tor’s censorship-resistant ‘bridges’ from Iran, which continued to climb during the latest period of disruption. It should be noted, however, that as of the time of writing, the number of combined direct and bridge-connected users is only a little over 10,000. Considering the estimated 8-10 million users of Psiphon, Tor’s position in Iran’s circumvention tool landscape appears to be at risk of becoming quite marginal.

![Tor Connections // 24/12 to 09/01](image)

*Figure 28 // The Tor Project data on connections*

Data published by The Tor Project showed the impact of Iranian information controls on regular relay connections. Censorship-resistant bridge connections increased as relay connections became unavailable.

Iranians are not only suffering from their own government’s efforts to limit internet services, but they also endure the negative impact of sanctions imposed on US-based tech companies. Either through the direct effects of US sanctions or overcompliance, some US
companies have long denied Iranian citizens access to their services, in some instances compromising their security in the process.

During this wave of protests, and following the filtering of Telegram, Iranians have continued to face issues using the secure messaging app Signal. According to internet freedom researcher Collin Anderson, Google's denial of Iranians' access to the cloud platform AppEngine makes it impossible for them to use Signal, which runs on the service.

139

Anderson, Collin, 31/12/2017, Twitter Post, https://twitter.com/CDA/status/947556800328433664
Despite these challenges, the seemingly widespread uptake of the circumvention tool Psiphon may end up turning the Iranian government's latest attack on online freedom of expression into something of a Pyrrhic victory. Again, Iranian internet users have demonstrated that they can adapt quickly to controls as they are imposed. If indeed millions more users are making use of circumvention tools such as Psiphon after the recent unrest, then that ultimately means that millions more Iranians have been empowered to immunise themselves from other aspects of state-directed content filtering, thereby granting themselves unimpeded access to the global internet.

Two Weeks On // The State of the Internet in Iran

Despite Iranian internet users attempt to bypass Internet there still appears to be a large drop in daily access to to Telegram public channels. To test the effect of filtering we choose to look at the number of views on two of Iran's largest public groups – the sports channel @varzesh3 and the comedy channel @mer30tv.

@varzesh3 (1,054,725 members) is a Telegram channel that posts a large number of live sports scores and video clips, and is one of the most popular sport-focused Telegram channels in Iran. On the days that Iranian newspapers are published, this channel shares a link to their round-up in a message on their page. This message lacks a headline, and just contains a picture of one sport-focused front page. As a recurring item of content with low re-share value, we counted the number of views of each of these posts as an indicator of channel members’ access.

Note that these posts were not made every day, and so there are some gaps in this dataset.

@mer30tv (1,117,193 members) is a family-friendly comedy and entertainment channel, sharing memes and online comedic content. The channel is not political and membership of the channel would not be controversial. For testing the viability of the channel we recorded viewership of their first daily message every day. This post contains a single sticker with dates in the Iranian, Islamic, and Gregorian calendars. This sticker does not contain any messages, memes or pictures and therefore is the item of content that is least likely to be shared by its viewers.

We chose these channels for their huge membership, but also their apolitical, and uncontroversial content. This means that as a result of the recent protests they should have not gained an unusual number of followers from outside Iran.
Figure 30 // View rates for Telegram channel @varzesh3

<table>
<thead>
<tr>
<th>Date</th>
<th>Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>18/12/2017</td>
<td>440,000</td>
</tr>
<tr>
<td>19/12/2017</td>
<td>397,000</td>
</tr>
<tr>
<td>23/12/2017</td>
<td>408,000</td>
</tr>
<tr>
<td>26/12/2017</td>
<td>423,700</td>
</tr>
<tr>
<td>27/12/2017</td>
<td>424,000</td>
</tr>
<tr>
<td>29/12/2017</td>
<td>478,000</td>
</tr>
<tr>
<td>30/12/2017</td>
<td>414,000</td>
</tr>
<tr>
<td>01/01/2018</td>
<td>297,200</td>
</tr>
<tr>
<td>02/01/2018</td>
<td>314,700</td>
</tr>
<tr>
<td>04/01/2018</td>
<td>317,200</td>
</tr>
<tr>
<td>06/01/2018</td>
<td>315,200</td>
</tr>
</tbody>
</table>

Figure 31 // Daily views on @varzesh3 posts, 19/12 to 06/01
Figure 32 // View rates for Telegram channel @mer30tv

<table>
<thead>
<tr>
<th>Date</th>
<th>Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>19/12/2017</td>
<td>81,600</td>
</tr>
<tr>
<td>20/12/2017</td>
<td>81,000</td>
</tr>
<tr>
<td>21/12/2017</td>
<td>109,600</td>
</tr>
<tr>
<td>22/12/2017</td>
<td>92,600</td>
</tr>
<tr>
<td>23/12/2017</td>
<td>113,600</td>
</tr>
<tr>
<td>24/12/2017</td>
<td>92,600</td>
</tr>
<tr>
<td>25/12/2017</td>
<td>92,000</td>
</tr>
<tr>
<td>26/12/2017</td>
<td>93,000</td>
</tr>
<tr>
<td>27/12/2017</td>
<td>100,000</td>
</tr>
<tr>
<td>28/12/2017</td>
<td>108,000</td>
</tr>
<tr>
<td>29/12/2017</td>
<td>93,000</td>
</tr>
<tr>
<td>30/12/2017</td>
<td>83,000</td>
</tr>
<tr>
<td>31/12/2017</td>
<td>62,000</td>
</tr>
<tr>
<td>01/01/2018</td>
<td>35,000</td>
</tr>
<tr>
<td>02/01/2018</td>
<td>39,000</td>
</tr>
<tr>
<td>03/01/2018</td>
<td>36,000</td>
</tr>
<tr>
<td>04/01/2018</td>
<td>40,000</td>
</tr>
<tr>
<td>05/01/2018</td>
<td>41,000</td>
</tr>
<tr>
<td>06/01/2018</td>
<td>42,000</td>
</tr>
</tbody>
</table>
A sharp decline in the number of daily users of these channels is evident from December 29 in both of the datasets we collected. Data was accurate as of January 8, 2018.

Data from the University of Tehran’s Social Lab (obtained via the @tlgrphy Telegram channel) also demonstrates similar trends to those we have observed on @varzesh3 and @mer30tv. Dr Taha Yasseri’s analysis of data published by the Social Lab demonstrates that filtering has had a clearly negative impact upon the use of Telegram in Iran, but that the app is still being used by a significant number of citizens.
At the same time as Iranian citizens were struggling to connect to Telegram, a number of official government-run channels continued to flout the ban and share content using the
service. Although the channel of Supreme Leader Khamenei halted between December 30 – January 9, the official channels of the state broadcaster IRIB News and the ICT Ministry remained active.

Khamenei made a noteworthy return to the channel on January 9 – in his first official post of 2018 he shared an image promoting his new channel on the domestic messaging apps iGap and Soroush.140

This move by Khamenei may signal the start of an aggressive new drive to push users towards communications apps such as Sorouh and iGap. That being said, so many private businesses, media organisations, and even state officials and organisations have invested heavily in the creation of sophisticated operations on Telegram, and will likely resist this impulse. The state's aspiration to fragment the Iranian user base across an array of new communications apps will only make life more difficult for anyone trying to influence citizens online – whether businesses, activists, or state-run institutions. Conflicts over Iran's ecosystem of communications apps are likely to intensify in the coming months.

All Change? // Our Conclusions

It remains difficult to say how crucial a role the recent filtering and internet disruptions played in the suppression of the recent unrest in Iran, as fatigue and heavy-handed tactics by state security forces clearly played a part in the protests' dissipation. Regardless, the government's deployment of information control measures has demonstrated that there is still no way for Iran to choke off access to the global internet without delivering major disruption and economic harm to its citizens.

Although officials have been attempting to sell Iran as the up-and-coming 'Silicon Valley' of the region for the past several years, it seems that the sense of optimism and stability among some digital startup entrepreneurs has been shaken amidst the events of recent days. While previously only a small number of startups experienced the devastating effect of filtering on their businesses, the filtering of Telegram has done real damage to the operations of thousands of businesses. If there is a silver lining to this wave of disruption, it is the hope that recent events will lead more tech leaders and entrepreneurs to become actively involved in lobbying the Iranian government to limit its internet control policies in the months ahead.

It is encouraging to see an uptake in the usage of VPNs and other privacy tools among some users. Even if connections to the global internet are ultimately fully restored, we would strongly encourage Iranian citizens to continue to make use of such tools to guarantee their security and privacy in the future.

That said, adaptations made by Iranian users may not all be for the better. It is extremely worrying to see the rise of domestic messaging apps (such as Sorouh and iGap), unofficial and insecure Telegram forks, and to observe the government's détente with WeChat (given

140 Khamenei, 09/03/2018, Telegram Post, https://t.me/khamenei_ir/7624
All of these alternatives not only compromise the privacy of Iranian internet users even more than by using Telegram, but they also contribute to the development of an insecure digital ecosystem in Iran by forcing millions of citizens to use applications that are vulnerable to cyberattacks, hacking, and surveillance.

The last ten days have also proven the importance of further monitoring Iran’s overarching policy of separating domestic and international traffic. While we have in the past written about the devastating effect of ISPs setting different prices for domestic and international traffic, we have now seen how this policy has been used to incentivise users to switch to insecure, domestically hosted services.

Until we receive clarity from Iranian authorities about the planned duration and extent of ongoing information controls, Small Media will continue to monitor social media usage patterns, information flows, and public statements from Iranian officials. Although Jahromi has promised that the filtering of Telegram is set to be lifted in due course, this decision has been slow coming. As the filtering of Instagram has been lifted by the ICT Ministry, it seems that Jahromi may have the power to end the ban on Telegram too. Time will tell whether he bows to pressure from Iranian businesses, or the hardliners who have been pushing for its permanent filtering. (Of course, given the competing centres of policy-making power in Iran, it may well be that the filtering of Telegram is being maintained by higher powers in the judiciary, or even in the Supreme Leader’s office. The lack of government transparency on this point dramatically complicates the business of prediction).

If the filtering stays in place for a prolonged period, we will continue to assess the long-term impacts of this policy upon freedom of information and expression, and on the activities of citizens and businesses that have become so dependent upon the service. Indeed, unless restrictions are lifted soon, we are likely to see a realignment of Iran’s digital landscape to an extent even greater than in the aftermath of Twitter and Facebook’s filtering in 2009. A great deal could change in the coming weeks.

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On 28 November Iranian President Hassan Rouhani appeared on state television to report on the progress made by his government in its first 100 days. Whilst the first 100 days of his first presidency in 2013 proved to be a short window for his administration to bring about any fundamental change, the first 100 days of his second term, combined with the final months of his fourth year as president hinted at some significant changes in ICT policy and internet freedom in Iran.

The appointment of Mohammad-Javad Azari Jahromi as ICT Minister was criticised by many of Rouhani's supporters. And his combination of new ICT policies, alongside a closer working relationship between Rouhani and his conservative critics, hints at troubling times ahead for internet freedom in Iran. Indeed, it seems apparent that Rouhani's public promise to liberalise the internet in Iran is not going to materialise – his administration seems to be aligned with conservatives and hardliners, and their plans to create an inward-looking internet. This new approach of utilising 'next-generation controls' pivots away from blunt internet controls, instead focusing on users' fears and incentives. This shift in approach should not be ignored by the internet freedom community, as it necessitates new modes of documentation, advocacy, and action.

Rouhani's First Term

In 2013, by virtue of putting an end to Mahmoud Ahmadinejad's presidency, Rouhani brought a degree of hope to Iranian internet freedom activists. He explicitly promised the liberalisation of cyberspace in Iran, and his government's commitment to SHOMA was viewed as lip service to appease conservative critiques. His investment in internet infrastructure in the country, which has expanded access, improved speed and reduced the cost of connectivity for the average user, was applauded by many observers. Hope was also fostered by then ICT Minister Mahmoud Vaezi's timely public debates with conservatives and judiciary representatives on the Commission to Determine the Instances of Criminal Content (CDICC), which suggested to some that Rouhani aimed to curtail Iran's use of internet controls.

The improvements made during Rouhani's first term were also reflected in other publications. There was a slight improvement in Iran's score in each of the four Freedom on the Net annual reports by Freedom House. This made sense – during his first four years in office Rouhani resisted the filtering of Telegram, two elections were held without internet shutdowns, and (to a large extent) activists were able to use digital tools to campaign for (pre-approved) candidates. All of this was achieved in addition to record levels of

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142 Reuters, '28/12/2017, 'Rouhani says Saudis call Iran an enemy to conceal defeat in region', http://reut.rs/2EvL1Yt
investment in internet infrastructure, and the creation of jobs in the newly energised tech startup scene.

This combination led to much of the analysis of Iranian ICT policy during Rouhani’s first term being conducted through the lens of an expansion of access and resistance of hardline pressure on internet controls. This narrative was celebrated by Rouhani during his re-election campaign and was used by conservatives as an attack line against his liberal internet policies. For example, during the campaign, Rouhani used a screenshot of Twitter in his election video, hinting at his desire to put an end to the filtering of Twitter. His opponent Ebrahim Raeisi attacked him for failing to hold regular meetings of the Supreme Council of Cyberspace (SCC), suggesting that Rouhani avoids the meetings to escape hardline influence and scrutiny over internet policy.\(^\text{144}\)

Despite building a campaign focused on internet freedom, Rouhani’s first few weeks delivered the first signs of a shift of policy in the ICT Ministry. Rumours that Jahromi was to replace Vaezi as ICT Minister were met with opposition, with critics pointing out his previous links to the Intelligence Ministry and his involvement in heavy-handed arrests following the aftermath of the 2009 disputed presidential election.\(^\text{145}\) However, Jahromi was chosen, and soon became the youthful poster boy for Rouhani’s new appointments. Even then, he was met with strong opposition in Parliament during his confirmation hearing, receiving just 150 votes, compared to 120 against, 7 abstentions and 9 spoilt ballots. In the last few months Jahromi’s policies, engagements and comments have confirmed the suspicions of many who saw his appointment as a step towards bridging the policy gap between Rouhani and his hardline opponents. However the policies championed by him and his approaches towards the future of the internet in Iran are not only reflective of his personal preferences, but also that of a broader outlook and policy line shared by the state. His approach to ICT policy in Iran suggests that we may be witnessing a shift in Iran’s approach to restricting online freedoms – a long-term strategy that relies on the creation of inward-looking and unequal online spaces in the country.

**An Inward-Looking Network**

Iranian netizens have faced stringent internet controls since the early days of President Mohammad Khatami, and the expansion that happened under Mahmoud Ahmadinejad. In addition to this, towards the end of Rouhani’s first term as president there were signs of a major new threat to access to the World Wide Web. One policy – celebrated as a result of increased investments in SHOMA – meant that internet users would be charged 50% less for accessing a selection of domestic websites than they would for accessing content hosted outside Iran.\(^\text{146}\) In previous Filterwatch reports, we have outlined how this policy threatens net neutrality in Iran and thus poses a serious challenge to freedom of access by Iranian netizens.

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In addition to introducing cost reductions for domestic websites, Iranian authorities have been persistent in their pursuit of producing more domestic content and giving legal and financial advantages to domestic apps and service providers. For instance, new guidelines published by the SCC in August 2017 outline that banking and financial transactions via messaging apps can only be provided by domestic apps. The introduction of such a policy could potentially signal a change in line with the development of WeChat in China, and how its ability to provide financial and commercial services, among many other features, has contributed to its dominance.

Unequal Access and Self-Censorship

Throughout his tenure, Vaezi was always adamant that Iranian officials communicate regularly with international tech companies and private service providers such as Telegram. On the one hand his claims were often dismissed by many observers as an action to keep conservatives at bay, and on the other hand public figures from tech companies such as CEO of Telegram maintained an ambiguous line about their communications with Iranian authorities. This led many to believe that there has been no direct communication between the two. However, when it was announced that Telegram was to use CDNs located in Iran, many were taken by surprise at the level of talks that may have taken place to enact this. Since then, Iranian officials have claimed to be in talks with other international companies, such as Twitter. The lack of transparency around these talks has contributed to an impression that talks may result in netizen's privacy and access being compromised. Seeking to move tech companies' servers into Iran where data would be more accessible to authorities appears to remain a long term strategy of the Iranian authorities. This is a particularly worrying move as in recent years, there have been a number of cases of tech companies agreeing to move their servers to countries with less than desirable privacy policy and practices.

In one of his first public statements after he was pinned as the potential new ICT Minister, Jahromi talked about providing journalists and academic institutions with lowered internet controls. Whilst at face value this move may display a step towards diluting Iran's filtering regime, it could also be seen as a move from mass filtering to more targeted controls, in which the state decides who has access to what, whilst simultaneously appearing to be more liberal. Jahromi has also made other comments that stem from the same ideology. On Instagram, he has boasted of his efforts to increase connectivity speed for gamers, allowing Iranian gamers better access to international gaming servers.

Another recent threat to Iranian internet users is corporate surveillance. The growth of domestic startups in Iran has in turn lead to an increased use of domestic apps by Iranians. One of the startups that has been popular in recent months is the ride hailing app ‘Snapp’.

147 Small Media, ‘IIIP // August 2017’.
which operates on a similar model to Uber. Since the app’s introduction, Snapp drivers have been relying on the navigation app ‘Waze’. However, a recent ruling not only filtered Waze due to its historic link to Israeli investors, but also in an unprecedented attack on personal privacy in Iran, as it transpired that Snapp spied on its Android users. If the app detected Waze on the user’s phone, Snapp would display a warning message to the user, preventing them from using the Snapp app.

Another example of Iran’s ambitions to create a heavily monitored online sphere are recent comments by the Secretary of the SCC Abolhassan Firouzabadi. He again talked about a plan to require all Iranians to verify their identity in order to connect to the internet. Although the current state of the policy remains unclear both in terms of its ambitions and its practicality, it is something that has previously been named by Rouhani’s Vice President Jahangiri as one of the components of the SHOMA project. If this project were to be rolled out, it could have a dire impact on the way Iranian netizens conduct themselves online, and lead to an increase in self-censorship under the fear of constant surveillance.

**New Allies in Iran’s ICT Policy Setting?**

During the 2017 Presidential Election, Rouhani was heavily criticised by his main opponent Ebrahim Raesi for not calling regular meetings of the Supreme Council of Cyberspace. Raesi, who due to his former position as Attorney-General of Iran was a member of the SCC, insisted this was because Rouhani feared accountability over his ICT policies. Many believed that this was due to the fact that the members that were handpicked for the council by the Supreme Leader had at times been vocal critics of a number of Rouhani’s policies.

However, last month the 44th meeting of SCC was held by Rouhani, the third since his re-election. The meetings appear to be more adept at producing documentation and guidelines regarding different issues at each meeting. While it is hard to reach a firm conclusion about how the SCC’s ICT policy role in Iran may have been emboldened, it seems fair to conclude that Rouhani’s current ICT policy is not so out of sync with the SCC for him to actively avoid holding meetings.

Although the judiciary still has the power to block certain websites by bypassing the CDICC, it seems that even the public confrontations between former ICT Minister Vaezi and judiciary officials have not been continued by new ICT Minister Jahromi. All parties, even the more traditionally conservative influencers such as Abolhassan Firouzabadi and the Attorney-General of Iran Mohammad-Jafar Montazeri have been conciliatory in their tone regarding filtering. It is clear that the vast majority of policy makers in Iran agree that filtering is not the only instrument that is available in regards to internet controls.

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150 National Cyberspace Centre, (2017), [سمازده نظم احراز هویت در فضای مجازی](http://bit.ly/2jkHUVg), retrieved 05/04/2018,
Concluding Statement

What we have seen in the last 100 days offers every sign that there may have been a significant realignment of the forces managing internet controls in Iran. Significantly, this realignment appears to be less focused on the sorts of filtering and monitoring practices that started damaging internet freedom in Iran over 10 years ago. It appears that the new long-term agenda of Iranian authorities is to provide incentives and introduce a constant fear of monitoring to change the online behaviours of Iranian users. By designing an inward-looking online ecosystem, Iranian authorities are seeking to fight what they perceive as the cultural and political threats of connection with the outside world by keeping the internet browsing habits of Iranian netizens restricted within virtual borders.

This evolution in Iran’s long-term plan to control the flow of information is not unique to Iran, and nor are the principles of the challenges that it poses to internet freedom activists. In 2010 Ronald Deibert and Rafal Rohozinski highlighted this shift from simple filtering to more complicated models of information controls. They labeled this evolution as a move from first-generation internet control methods to second and third. This involves a wider range of agents involved in manipulating user behavior, alongside pricing incentives to discourage and confuse users, and ultimately deny them access to undesirable information.

Such a shift poses serious questions and challenges to the internet freedom community, which has until now been largely effective in fighting and exposing censorship and surveillance practices in Iran. The internet freedom community must look beyond filtering policies in determining Rouhani’s commitment to internet freedom – foreign based apps and websites should not be perceived as free and accessible by virtue of not being filtered. We must take into account the use of economic incentives to limit internet access to domestic services, or the intensification of self-imposed censorship as a result of the fear of constant surveillance.

If the internet freedom community is to be effective in promoting free and safe internet access for Iranian internet users in the future, it must move to less known territories, to fight the isolationist, inward looking, and unequal internet which Iran is moving towards. The community must:

**Understand the real policy making processes, the long-term goals and political coalitions operating inside Iran:** Over the last few years we have highlighted the fundamental rearrangement of powers in ICT policy making in Iran. The emergence of the CDICC and SCC has meant that the government, security forces, and judiciary have entered an era of power sharing under the broad leadership of the Supreme Leader. Perhaps this partnership between different centers of power is about to enter a more streamlined phase as Rouhani’s first term was focused on dealing with the hangover of Ahmadinejad’s messy and aggressive attack on the internet.

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Instead of focusing on (often short lived) disagreements between the government and the judiciary, the internet freedom community must focus on Iran’s long term vision for the transformation of its internet infrastructure and the online behaviours of its citizens.

**We must understand user behaviour, in order to change it:** As is becoming more and more apparent, influential ICT policy makers are beginning to agree on methods for transforming user behaviour in Iran, by allowing accessible but monitored spaces for activity (Telegram), and changing connectivity speeds and access costs depending on the desirability of content (new internet tariffs). Providing Iranian Internet users with free and safe access to the world wide web will require more than localising VPNs or promoting two step verification. It will instead require the promotion of behaviour changes which seek to bypass government measures or limit their effect.

For the internet freedom community to be able to effectively do this we need to develop comprehensive insights into how different sections of Iranian society interact with the internet in Iran. For example, understanding that the new wave of connected citizens taking advantage of mobile internet may have never have even been connected through a desktop before owning a smartphone is key. Projects monitoring filtering, speed, and internet shutdowns have provided much needed information about content control in Iran, but in order to understand the effect of programs designed to encourage self-censorship or manipulate behaviour, we must look into ethnographic studies and the in-depth user experiences of Iranians inside the country. The needfinding methodologies devised by SecondMuse are a good example of the user-centred approaches that we should be drawing upon.

**Promote responsible and transparent commercial interaction by international firms with Iran and inside Iran:** Former ICT Minister Vaezi was very successful in promoting international investment, and it also appears that there has been some form of interaction between Rouhani’s government and Telegram. Those concerned with a free, fair, and accessible internet must closely follow Iran’s interactions with foreign bodies closely. There must be a more coordinated effort to seek transparency from international bodies and commercial entities seeking to trade with Iran or to adopt their services to match Iranian demand. This could involve putting pressure on private companies to respect Iranians’ right to privacy and access to information when they are signing contracts with, or operating in, Iran.

**Monitoring software and hardware developed inside Iran:** The recent incident with Snapp has demonstrated Iran’s willingness to pass the responsibility of censorship and surveillance measures to private companies. This must not be viewed as an isolated incident, in contrary this fits perfectly with Iran’s previous attempts to pass the job of filtering to local ISPs. Iranian users are no different to global internet users, in that every week or month a new startup produces an app which offers efficiency and ease of use. From apps arranging delivery, to multimedia apps providing Iranians with access to music and movies, these apps must be held to account. There must be a focus from the internet freedom community on the policies and practices of domestically developed apps, how
they handle user data, and what level of cooperation exists between them and Iranian authorities.

Implementing the above measures requires greater access to Iran, greater ethical considerations, and the development of expertise and knowledge unique to Iran (and perhaps a handful of similar countries). Fighting these new measures also poses a new challenge to Iranian activists, with both the threat of being labeled as not appreciating the expansion of access in Iran, but also the issue of being preoccupied by older concerns around privacy and content control. Fighting the next phase of internet controls in Iran will be more challenging and more delicate than anything previously faced by the internet freedom community.
Summary // 2017 in Review

To conclude, in some ways, on the surface much of 2017 was very much a continuation of 2016, with continuing debate about the status of social media platforms, and the internet in general. The year also saw continued deadlock between Rouhani’s more moderate administration and the efforts of the CDICC.

Yet there were also fundamental changes - the presidential election illustrated that conservative attitudes towards social media appear to be shifting, as they recognise the power of Telegram and Instagram in terms of communicating their message to the masses. And although conservatives failed to get Raeisi elected, it was clear that online campaigning played an integral part of his campaign.

This shift in hardliner attitudes to social media was marked more profoundly by the treatment of social media platforms during the December-January unrest. Given that the last few years has a seen a swathe of anti-Telegram – and wider anti-social media – rhetoric, the unrest presented authorities with the perfect excuse to bring a permanent ban against platforms they disagreed with. However, the fact that any bans were only temporary, combined with an increase in ‘soft’ control measures, such as differentiated pricing, and pushes to develop better domestic products suggests that conservatives have given up the fight when it comes to direct controls and filtering.

As we outlined in our final feature of this report, the administration took significant steps towards altering their approach to internet controls. Splitting domestic and international traffic, as shown by the events of January 2018, gives the state the ability to throttle internet access. And besides this obvious control, the price differentiation that now exists between the two suggests that internet controls will take a more subtle and softer approach.

Given the protests that took place, and the government’s response to them, it is clear that despite back-and-forth between conservatives and hardliners over the efficacy of current internet controls throughout the year, the state has little concern for restraint when the time comes.