



APRIL 2016



Filterwatch



Iranian Internet Infrastructure and Policy Report

A *Small Media* monthly report bringing you all the latest news on internet policy and online censorship direct from Iran.

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— Introduction —

In our monthly reports, we often discuss news reports or rumours of internet filtering. This month, we're putting some of those hypotheses to the test. With help from computer science researchers at Information Controls Lab (ICLab) we designed an experiment to test whether or not a series of websites were blocked, and if so, by which censorship methods. Before delving into the specifics of the research, here is a bit of background information about ICLab.

ICLab is a research project that aims to provide reliable information controls and censorship measurement data at scale. It is a collaborative effort between researchers at [Stony Brook University](#), [The Citizen Lab](#), and [Princeton University](#). ICLab has vantage points all over the world that perform internet measurements and send the data back to a centralized infrastructure that analyzes the data and identifies known censorship and information controls methods.

Executive Summary

Key findings

- Several news websites, such as <http://www.bbc.com/persian> and <http://persian.euronews.com/> were blocked on all the vantage points we tested.
- The most common censorship methods we observed include DNS manipulation and packet injection.
- There appears to be some evidence to suggest that internet filtering in Iran tends to be implemented by a centralized country-wide censorship apparatus (as opposed to individual ISPs), though further research would be needed to confirm this.

Key developments

APRIL 12



According to Iranian officials, Iran has imported 1.4 trillion IRR (4.5 million USD) worth of tablets into the country.

APRIL 12



Vaezi said Telegram will close any pornographic channels within 24 hours of a request from Iran's government.

APRIL 13



In a meeting between officials from the ICT and Interior Ministries, an agreement was reached that online dating sites should be licensed instead of blocked altogether.

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Measuring Internet censorship in Iran



In our monthly reports, we often discuss news reports or rumours of internet filtering. This month, we're putting some of those hypotheses to the test. With help from computer science researchers at Information Controls Lab (ICLab - more on them below), we designed an experiment to test whether or not a series of websites were blocked, and if so, by which censorship methods. Before delving into the specifics of the research, here is a bit of background information about ICLab.

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We are excited to announce that over the next few months, each Iranian Internet Infrastructure and Policy report will feature a contribution from ICLab. This will typically take the form of a brief discussion of the results of a censorship experiment. However this month, we have teamed up with ICLab to conduct a slightly more detailed experiment. Small Media selected the URLs to be tested and conducted the write-up of the final report, while ICLab took the lead on the technical research and the discussion and interpretation of the results.

METHODOLOGY

Censorship experiments were conducted on 7 URLs that were run on four vantage points running ICLab software. These vantage points are located in 3 Autonomous Systems (AS) inside Iran: 2 in **AS 48434** (Tebyan-e-Noor Cultural-Artistic Institute), and one in each of **AS 16322** (Pars Online PSJ) and **AS 42337** (Respina Networks & Beyond PJSC).¹

We collected data from the above vantage points in the field and analyzed them to identify information controls and censorship. For the case of website blocking detection, we have automated “page-view” queries run on our vantage points that try to load websites while collecting measurement data. This data is sent back to the centralized system to identify anomalies and known blocking methods (e.g. blockages, DNS injection).

THE URLS

The URLs tested are:

1. <http://persian.euronews.com>
2. <http://dargahpardakht.com>
3. <http://www.kajonline.ir>
4. <https://jensiat.io>
5. <http://www.bbc.com/persian>
6. <http://www.samen-alhojaj.ir>
7. <https://www.zarinpal.com>

These URLs were selected because the subject matter they cover suggest that they might be filtered, or because we have heard claims on social media, in blogs, and on news reports that the sites might be filtered. Below is a brief description of each website and a short explanation of why we thought it was worth testing.

¹ For an overview of the Autonomous Systems that comprise Iran’s internet, see: https://smallmedia.org.uk/media/articles/files/IIIP_Jul15.pdf#page=9 (pg. 9 - 11).



<http://persian.euronews.com/>

This is the website of Euronews' Persian Service. According to rumours on Iranian social media and blogs, the website may have drawn the ire of the authorities due its coverage of Iran's involvement in Syria.



<http://dargahpardakht.com/>

This is an online payment website whose users and owner have complained of disruptions, possibly due to a court order.



<http://www.kajonline.ir/>

This is a reformist news website. Reformist media is often a popular target for Iran's censorship authorities.



<https://jensiat.io>

This is a new website (disclosure: Small Media was involved in its development) with content about sexual health and digital security, two sensitive topics in Iran.



<http://www.bbc.com/persian>

This is the Farsi-language and Iran-focused version of BBC World News. Iranian conservatives' recent suspicions regarding the BBC's role in parliamentary elections suggests that this website might be vulnerable to disruption.



<http://www.samen-alhojaj.ir>

This is the website of a financial institution whose activities we rumoured to have been the subject of a recent court order, so we wanted to see if the website was still accessible.



<https://www.zarinpal.com>

This payment service is similar to Paypal. Given recent reports of disruptions to other online payment services, we thought it would be worthwhile to check the accessibility of this website.

RESULTS

This section explains the results of censorship experiments on 7 URLs that were run on four vantage points running ICLab software.

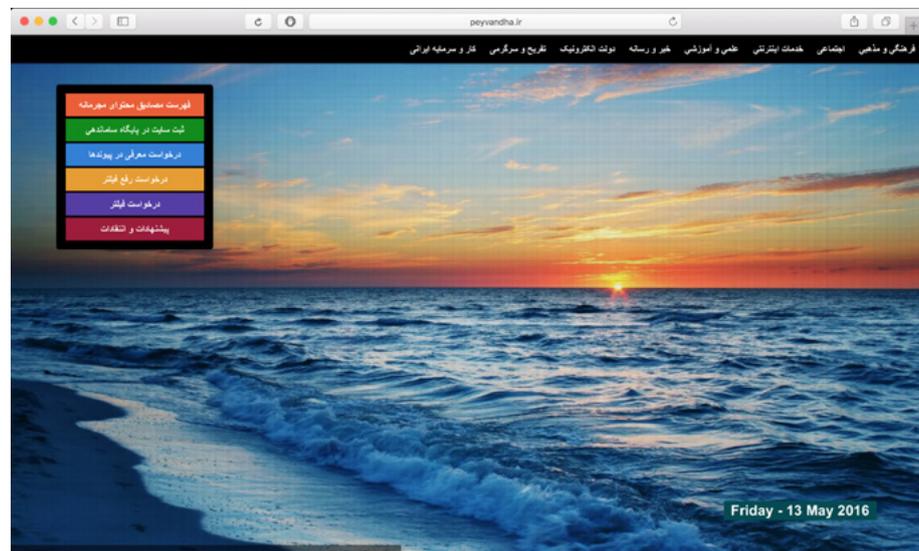


RESULTS FOR <https://jensiat.io>:

We observe different results between vantage points for the URL <https://jensiat.io>:

- Our vantage point in **AS 48434** (Tebyan-e-Noor Cultural-Artistic Institute) has unrestricted access to the website.
- The vantage point in **AS 16322** (Pars Online PSJ) received the locally routable IP 10.10.34.36, as opposed to 104.31.88.225 (which was observed in the successful page load from the AS we tested (AS 48434)). The fact that 10.10.34.36 is not a globally routable address, and differs from the globally routable address normally seen for jensiat.io indicates that there is **DNS tampering** occurring for this URL. For the end user, this means that he or she will see the blockpage that typically greets Iranian users attempting to access blocked content.

Figure 1.
peyvandha.ir, the website
embedded inside the
default blockpage in Iran



We observe that Iran's censorship apparatus does not support requests sent using **TLS** encryption (i.e. URLs that begin with **HTTPS**); when a user attempts to initiate the TLS session it receives a connection refused error. This means that **HTTPS** websites that are redirected to this address will be blocked, and will not show anything (not even a blockpage).

- For the vantage point in **AS 42337** (Respina Networks & Beyond PJSC), we observe a valid DNS reply with the IP address 104.31.88.225. However, upon attempting to connect to the site, *the connection fails* as the client received an injected HTTP reply from the censor containing HTML for the standard block page observed in Iran.

It is worth noting here that because the website uses HTTPS, the redirect does not work and results in an error. Thus, access is blocked, but no blockpage is shown. The result in this case (i.e. the website is inaccessible) is the same as in the case above, but the censorship method is different. Whereas in the case above access was blocked using DNS tampering (which rerouted the user to the blockpage), in this case access is blocked using packet injection (which prompted the connection to fail and left the user with an error message rather than the blockpage). The process of this packet injection is discussed in more detail below.

Below we show the error observed when we attempt to access <https://jensiat.io> from our vantage point in **AS 42337** (Respina Networks & Beyond PJSC). The connection ends erroneously and it is flagged that an “unexpected TLS packet was received”.

```
$ curl -v https://jensiat.io
* Rebuilt URL to: https://jensiat.io/
* Trying 104.31.88.225...
* Connected to jensiat.io (104.31.88.225) port 443 (#0)
* found 173 certificates in /etc/ssl/certs/ca-certificates.crt
* found 692 certificates in /etc/ssl/certs
* ALPN, offering http/1.1
* gnutls_handshake() failed: AN UNEXPECTED TLS PACKET WAS RECEIVED.
* Closing connection 0
curl: (35) gnutls_handshake() failed: An unexpected TLS packet
was received.
```

However, upon looking at the packet capture taken during this same session, we can see that this “unexpected TLS packet” was actually Iran’s standard blockpage (with an `iframe` tag pointing at 10.10.34.36, the local IP address for the blockpage):

```
17:47:35.242607 IP (tos 0x0, ttl 59, id 0, offset 0, flags [none],
proto TCP (6), length 424)
    104.31.89.225.443 > [...].33300: Flags [F.], cksum 0x7ecb
(correct), seq 68383665:68384037, ack 1555119495, win 27, options
[eol], length 372
    0x0000:  4500 01a8 0000 0000 3b06 dc5d 681f 59e1  E.....;...]h.Y.
    0x0010:  05a0 da52 01bb 8214 0413 73b1 5cb1 3d87  ...R.....s.\.=.
    0x0020:  8011 001b 7ecb 0000 0000 0000 0000 0000  ....~.....
    0x0030:  0000 0000 4854 5450 2f31 2e31 2034 3033  ...HTTP/1.1.403
    0x0040:  2046 6f72 6269 6464 656e 0d0a 436f 6e6e  .Forbidden..Conn
    0x0050:  6563 7469 6f6e 3a63 6c6f 7365 0d0a 0d0a  ection:close....
    0x0060:  3c68 746d 6c3e 3c68 6561 643e 3c6d 6574  <html><head><met
    0x0070:  6120 6874 7470 2d65 7175 6976 3d22 436f  a.http-equiv="Co
    0x0080:  6e74 656e 742d 5479 7065 2220 636f 6e74  ntent-Type".cont
    0x0090:  656e 743d 2274 6578 742f 6874 6d6c 3b20  ent="text/html;.
    0x00a0:  6368 6172 7365 743d 7769 6e64 6f77 732d  charset=windows-
    0x00b0:  3132 3536 223e 3c74 6974 6c65 3e3c 2f74  1256"><title></t
    0x00c0:  6974 6c65 3e3c 2f68 6561 643e 3c62 6f64  itle></head><bod
    0x00d0:  793e 3c69 6672 616d 6520 7372 633d 2268  y><iframe.src="h
    0x00e0:  7474 703a 2f2f 3130 2e31 302e 3334 2e33  ttp://10.10.34.3
    0x00f0:  363f 7479 7065 3d49 6e76 616c 6964 2053  6?type=Invalid.S
    0x0100:  6974 6526 706f 6c69 6379 3d73 736c 2d62  ite&policy=ssl-b
    0x0110:  6c6f 636b 616e 2022 2073 7479 6c65 3d22  lockan.".style="
    0x0120:  7769 6474 683a 2031 3030 253b 2068 6569  width:.100%;.hei
    0x0130:  6768 743a 2031 3030 2522 2073 6372 6f6c  ght:.100%".scrol
    0x0140:  6c69 6e67 3d22 6e6f 2220 6d61 7267 696e  ling="no".margin
    0x0150:  7769 6474 683d 2230 2220 6d61 7267 696e  width="0".margin
    0x0160:  6865 6967 6874 3d22 3022 2066 7261 6d65  height="0".frame
    0x0170:  626f 7264 6572 3d22 3022 2076 7370 6163  border="0".vspac
    0x0180:  653d 2230 2220 6873 7061 6365 3d22 3022  e="0".hspace="0"
    0x0190:  3e3c 2f69 6672 616d 653e 3c2f 626f 6479  ></iframe></body
    0x01a0:  3e3c 2f68 746d 6c3e  ></html>
```



RESULTS FOR <http://persian.euronews.com/>, <http://dargahpardakht.com/>, <http://www.bbc.com/persian>, and <http://www.samen-alhojaj.ir>



These sites are all blocked from all vantage points with an injected HTTP blockpage (without DNS redirection). The censor inspects unencrypted HTTP requests and upon detecting the censored URLs, injects a response containing the peyvandha.ir blockpage (Fig. 1) and then ends the connection with a TCP reset packet (results pages [here](#), [here](#), [here](#), and [here](#) respectively).



RESULTS FOR <http://www.kajonline.ir/>

- This website is available and can be accessed from **AS 48434** (Tebyan-e-Noor Cultural-Artistic Institute) and **AS 16322** (Pars Online PSJ).
- It is blocked when accessed from **AS 42337** (Respina Networks & Beyond PJSC) with an injected HTTP response that redirects to the blockpage server and ends with a reset packet (results page [here](#)).



RESULTS FOR <https://www.zarinpal.com>

This page is available from all vantage points (results page [here](#)).

SUMMARY OF RESULTS

The table below indicates whether or not a given URL was accessible from each vantage point, and if not, which censorship method was used to block access.

	DNS MANIPULATION + BLOCK PAGE	NO DNS MANIPULATION + INJECTED BLOCK PAGE	TLS CONNECTION ERROR
https://jensiat.io			
AS 16322 (Pars Online PSJ)	X		
AS 48434 (Tebyan-e-Noor Cultural-Artistic Institute)			
AS 42337 (Respina Networks & Beyond PJSC)			X

http://persian.euronews.com/ http://dargahpardakht.com/ http://www.bbc.com/persian http://www.samen-alhojaj.ir			
AS 16322 (Pars Online PSJ)		X	
AS 48434 (Tebyan-e-Noor Cultural-Artistic Institute)		X	
AS 42337 (Respina Networks & Beyond PJSC)		X	

http://www.kajonline.ir/			
AS 16322 (Pars Online PSJ)			
AS 48434 (Tebyan-e-Noor Cultural-Artistic Institute)			
AS 42337 (Respina Networks & Beyond PJSC)	X		

https://www.zarinpal.com/			
AS 16322 (Pars Online PSJ)			
AS 48434 (Tebyan-e-Noor Cultural-Artistic Institute)			
AS 42337 (Respina Networks & Beyond PJSC)			

CENSORSHIP METHODS

So what tentative conclusions can we draw about the broader implications of the censorship methods we've observed here? In particular, is there any noteworthy difference between packet injection, DNS tampering, and TLS connection errors vis-a-vis ease of circumvention?

DNS manipulation is one of the older forms of censorship that is easier to circumvent than the other two methods discussed below. Using encrypted DNS solutions easily obviates this attempt at information control, because if the censors can't decrypt DNS queries, they won't know when users are trying to access forbidden content.

HTTP blockpage injection - which looks inside each HTTP request to find blocked hostnames and injects a blockpage in response if it finds one - is more difficult to circumvent. This is because changing (or removing) the "Host" name in the request will result in an error on the server-side since most websites are hosted on shared servers and, without a proper Host header, the server won't serve you the webpage you were looking for.

Websites that use HTTPS (HTTP over TLS) are among the most difficult for the authorities to block, since there's no way to inject anything into an encrypted and authenticated connection without breaking the connection. Moreover, since TLS sites are also hosted on shared servers, blocking at the IP level will have collateral damage (all other websites hosted on the same IP will be blocked).

Iran previously implemented IP-level blocking for censored TLS websites, but it seems like they are now looking at SNIs as well. SNI ([Server Name Indication](#)) is a non-encrypted (cleartext) part of the TLS handshake protocol that tells the TLS server which Hostname should be contacted. Since SNI is not encrypted, the censor can see and act upon it (e.g. block communication). In the case of jensiat.io, the censors appear to be injecting a non-encrypted HTTP response, that causes the TLS connection to end in error.

WHO IS RESPONSIBLE FOR CENSORSHIP?

Recent [comments](#) from ICT minister Mahmoud Vaezi suggested that Iran was looking into modifying its censorship methods, which were previously applied at the international gateway. In a previous [report](#), we speculated that Iran was seeking to roll its censorship system back to the model of the early 2000s, where each ISP is responsible for blocking specific services and content.

However, the results of the present study suggest some centralised control of the administration of internet censorship in Iran. Evidence for this interpretation can be found in the TTL ([time to live](#)) values of injected packets.

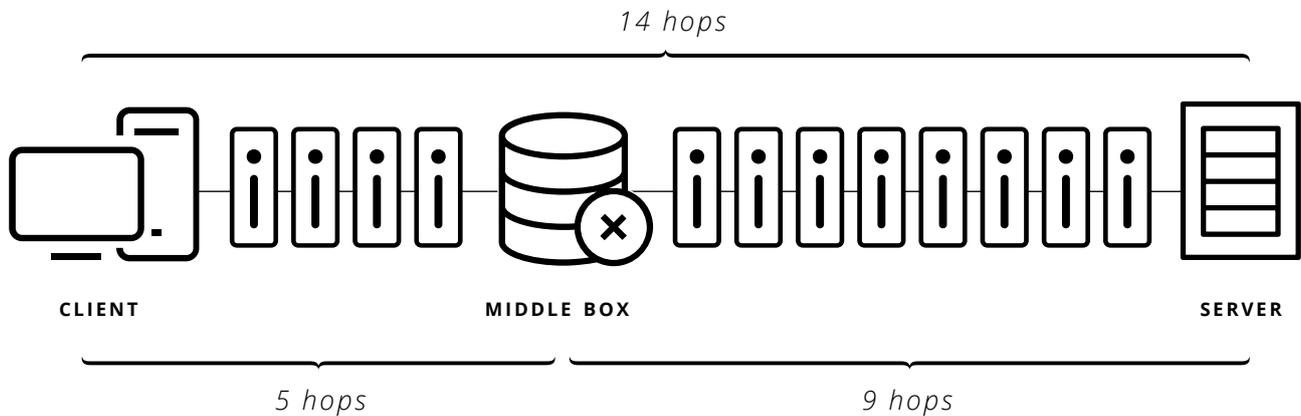
TTL is an upper limit on the number of hops a data packet can take in a computer network. It is initially set by the sender of a packet, and reduced by one at each hop the packet takes en route to its destination. So if a packet has an initial TTL value of 64, and it is sent to a destination 8 hops away, the TTL value will be 56 once the packet reaches its destination. In other words, the more hops a packet takes in a network, the lower the TTL value becomes, meaning that the lower the TTL value, the greater the distance between sender and recipient of a packet in a network.

Different machines set different initial TTL values (it's usually a power of 2: 2, 4, 8, 16, 32 etc.). So if we receive a packet with a TTL value of 50, we can guess that the initial TTL value set by the sender of the packet was the closest (larger) power of two (64). We then subtract the TTL value of the packet we received (50) from the estimated initial value (64) to guess the number of hops the packet has taken to reach us ($64 - 50 = 14$ hops). This value, known as the TTL difference, allows us to conclude that the server is approximately 14 hops away from the client (us).

We then compare this distance (14 hops) to the number of hops taken by the injected packets (which injected the blockpage). So if the injected packets have TTL values of 123, we subtract this from the closest power of two (128), which gives us an estimates of the number of hops these packets took ($128 - 123 = 5$ hops).

Now, we compare the TTL difference of (i.e. the number of hops taken by) the first packet (14) to the TTL difference of the injected packets (5). The difference ($14 - 5 = 9$ hops) is pretty significant, indicating that the distance between us and the source of the injected packets (i.e. 5 hops) is shorter than the distance between us and the server (14 hops). In other words, the censoring middlebox injecting the packets that lead to the blockpage sits *between* the client and the server.

So we can now roughly map the distances between the client, the packet injecting middlebox, and the server.



The location of the middlebox vis-a-vis the client and server tells us two interesting things. First, the distance between the middlebox and the server (9 hops) helps us confirm that the box is indeed a censor. If the middlebox were close to the server, say just one hop away, then it's possible that that middlebox could simply be a load balancer, which is legitimate. The fact that it is much further away in this case raises a red flag, which helps corroborate other pieces of evidence of censorship (e.g. the injected packets leading to the blockpage).

We can now be reasonably confident that censorship is taking place. The second piece of information that can be gleaned from the location of the middlebox is the level at which the censor operates. This is suggested by the distance between the client and the middlebox (5 hops, in the example above). If the distance were 1 or 2 hops, we could surmise that the censor was close to the client, perhaps operating at the ISP level. Since in the example above it is a bit further than that, we can assume that the censor is operating at a higher level than ISP.

To return to the present study, the TTL differences we observed for the packets injected by the censor were lower than the TTL differences for other packets — note the TTL anomalies in the results pages here, here, here, and here — indicating the intervention of a censoring middlebox that is pretty far away from the server. However, the TTL differences were not so low as to imply that the censor was operating at the ISP level. Taken together, this evidence suggests that it is more likely that the blocking is done by a centralized country-wide censorship apparatus than it being the responsibility of individual ISPs. However, further research would be needed to confirm this tentative conclusion.

CONCLUSION

This study has sought to investigate the accessibility of several websites from several vantage points in Iran. In the cases of <http://www.bbc.com/persian> and <http://persian.euronews.com/>, access was blocked from all the vantage points we tested. Yet in others, results were more mixed. For example, Jensiat.io was accessible from one AS, and blocked from the other two (using two different censorship methods). The most common blocking methods we have seen in this report are DNS manipulation, packet injection, and TLS connection errors.

This study has been narrow in scope, only examining 7 URLs. However, we have discovered a number of different censorship methods, and some variation in accessibility among the different vantage points. Future research could examine the extent to which Iranian authorities prefer each censorship method, as well as the question of who is ultimately responsible for the implementation of internet filtering.

2



Content Filtering and Blocked Sites



- **April 3:** According to Press TV, Telegram blocked 50 Iranian pornographic channels over a 48 hour period. ([Source](#))
- **April 11:** According to Parsine and user reports, Euronews' Persian service has been blocked in Iran. Until recently users could access the website without the use of circumvention tools. ([Source](#))
- **April 18:** Kaj Online, a reformist news [website](#) in Kermanshah has been filtered. ([Source](#))
- **April 20:** A [news website](#) belonging to reformers in Kuhdasht, Lorestan province, has been filtered. ([Source](#))
- **April 23:** An online payment website called [Dargah Pardakht](#) has been blocked in Iran. According to users they cannot access to the website any more. The website was similar to Western Union but only for Iran. ([Source](#))

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Statements from Ministries and Politicians

- **April 1:** Seyed Abolhasan Firouzabadi, Secretary of the Supreme Council of Cyberspace (SCC), released the SCC's plan for the Iranian year 1395 (March 2016-March 2017). Firouzabadi said the SCC will consider monitoring social media. Commenting on the cost of internet traffic, he noted that the price for both international traffic and domestic traffic should be same, and that there is no reason users should have to pay to more for international internet traffic. ([Source](#))
- **April 2:** Lotfollah Sabouhi, Deputy Director of the Communications Regulatory Authority (CRA), announced plans to launch a platform that will allow Iranians to check the registration status of their SIM cards. ([Source](#))
- **April 2:** Khosro Saljoughi, faculty member of the Information Technology Organization of Iran (ITO) claimed that there will be competition amongst Iranian search engines Yooz, Parsijoo, and Salam in the near future. Saljoughi added that there are 70 active IT companies interested in working on Iran's domestic search engine project. ([Source](#))
- **April 2:** ICT Minister Mahmoud Vaezi announced that mobile number portability will be rolled out in the first quarter of this year, which will allow Iranians to change mobile carriers without changing their phone numbers. He added that Iran's National Information Network (SHOMA) will be launched later this year. Finally, he noted that e-Government services will also be launched in the near future. ([Source](#))
- **April 2:** Nasrollah Jahangard, Director of the ITO, said that there is good integration between his organisation and government institutions, and that SHOMA is on course to launch in the next year. ([Source](#))
- **April 2:** Vaezi said that it would be difficult to achieve everything the ICT Ministry promised in the next Iranian year (March 2016 - March 2017). He noted that Iran's budget was based on outdated oil prices of 75 USD per barrel but has now dropped to 25 USD. Vaezi had originally promised to launch SHOMA by September 2016. ([Source](#))

- **April 2:** Mahmoud Khosravi, Director of the Telecommunication Infrastructure Company (TIC), announced the speed of Iran's domestic bandwidth will increase to 10 times faster than current levels by the end of the Rouhani government (May 2017) ([Source](#))
- **April 2:** Deputy ICT Minister Barat Ghanbari announced that the government invested 1.7 trillion IRR (56 million USD) in the IT sector over the last Iranian year (March 2015 - March 2016). He also said the government has invested 4 trillion IRR (132 million USD) in the IT sector over the last two and half years, while the private sector has invested 120 trillion IRR (3.9 billion USD). The Ministry aims to increase investment to 200 trillion IRR (6.5 billion USD) by the end of this Iranian year. Ghanbari also mentioned that by the end of the [Sixth Five-Year Plan \(2016-2021\)](#), Iran's ICT budget will increase to 600 trillion IRR (19.7 billion USD) and the ICT sector's contribution to Iran's economy will increase to 4.5% ([Source](#))
- **April 3:** In its first meeting after the Iranian New Year, the SCC decided to close down the High Council of Informatics, The Supreme Council of Information, and the Supreme National Security Council of Information Exchange (AFTA). The SCC will assume all of these councils' responsibilities. ([Source](#))
- **April 4:** President Hassan Rouhani held a meeting with Vaezi to review the Ministry's activities. Rouhani also mentioned that Iran should use all the potential for both domestic and international investors. He also said Iran cannot build all technologies from scratch and sometimes Iran should import and use other countries' technologies. Rouhani asked the ICT Minister to accelerate the implementation of e-Government. ([Source I](#), [Source II](#))
- **April 4:** Seyed Mostafa Seyed Hashemi, Chairman of the Board of the Telecommunications Company of Iran (TCI) said that 9,000 staff member have retired (out of a total workforce of 32,700) since the company's partial privatization in 2009. According to Hashemi, the TCI currently has 80,000 permanent and contract staff in Iran. ([Source](#))
- **April 4:** TCI Director Seyyed Asadollah Dehnad met Iranian Grand Ayatollahs with considerable authority on Sharia laws in Qom. The Grand Ayatollahs asked Dehnad to use all of the TCI's resources to promote religious culture and disseminate religious knowledge in Iran. Ayatollah Makarem Shirazi said that the TCI should work to prevent any misuse of information and communication technologies. ([Source](#))
- **April 4:** Vahid Ahmadi, Deputy Minister for Research & Technology at the Ministry of Science, Research and Technology, said that the Ministry's research and technology budget has increased to 70 trillion IRR (2.3 billion USD). ([Source](#))

- **April 5:** Farhad Amiri Moghadam, Deputy Director of Facilities and Commercial Evaluation at the Innovation and Development Fund said funding for startups provided by the Innovation and Development Fund in the last Iranian year (1394) was four times greater than the previous year's (1393) total. He added that the Fund's budget for last year was 5.8 trillion IRR (191 million USD), up from 1.03 trillion IRR (34 million USD) in 1394. ([Source](#))
- **April 5:** TCI Director Mahmoud Khosravi appointed Masoud Reza Soltani as Vice President of Planning and Development at the company. Soltani has a degree in Telecommunications from Tehran's ICT Faculty. ([Source](#))



TCI Vice President of Planning and Development Masoud Reza Soltani

- **April 5:** Vice President for Science and Technology Sorena Sattari said that Islamic Republic of Iran Broadcasting (IRIB) will allow Iranian startups to buy advertising time on the state network at a 40% discount. He additionally said there are 2,300 startups operational, and that the total revenue generated by these businesses is between 100 trillion to 110 trillion IRR (3.2 to 3.6 billion USD). ([Source](#))
- **April 6:** Deputy ICT Minister Ali Asghar Amidian said that the number of SMS messages sent during the Iranian New Year holidays dropped to 7 billion this year, from 12 billion last year. He noted that the number of mobile internet users has increased by 3.5 times above last year's total. He added that the following provinces had the most telecommunications traffic:
 - ◇ Razavi Khorasan
 - ◇ Gilan
 - ◇ Mazandaran
 - ◇ Golestan
 - ◇ Fars
 - ◇ Khuzestan
 - ◇ West Azerbaijan
 - ◇ Yazd ([Source](#))

- **April 8:** Hesam Khaneshki Zadeh, Head of the Research Support Fund for the Electronic Industries Development Organisation (SAHA), announced that the organisation will support 50 startup projects. He added they had a budgetary line item dedicated to supporting startups and other new companies in the last Iranian year (1394). He also mentioned that SAHA has received 75 proposals, of which 50 will receive funding. ([Source](#))
- **April 8:** Hashemi said that the company will update its telecommunication equipment with Next-Generation Network-IP Multimedia Subsystem (NGN-IMS) technology. He added that the TCI signed a 1 billion EUR deal with an unnamed European telecommunications company. He noted that the lifting of sanctions helped the TCI to obtain Letters of Credit (LC) required to finance equipment upgrades. ([Source](#))
- **April 8:** Morteza Mousavian, Head of the Digital Media and Information Technology Center (SARAMAD) in the Ministry of Culture and Islamic Guidance (MCIG) said that the number of unwanted, commercial SMS messages has decreased since the MCIG started running an SMS screening system. ([Source](#))
- **April 9:** Deputy ICT Minister Nasrollah Jahangard said that SHOMA, e-Government services, and IT-based businesses are top priorities for the ITO in this year. ([Source](#))
- **April 9:** Dehnad announced that the TCI will invest 26 trillion IRR (855 million USD) this year, and up to 72 trillion IRR (2.4 billion USD) within the next five years although he did not mention what the company would be investing in. Dehnad added that the TCI — which is partly government owned — has brought 200 trillion IRR (6 billion USD) into the government's coffers since the TCI's partial privatisation in 2009, and it has the potential to bring in 50 trillion IRR (1.6 billion USD) to the government each year. ([Source](#))
- **April 9:** Amir Hossein Davaie, Deputy of Technology and Innovation in the ICT Ministry said that the Ministry will assist Iranian companies in the development of locally produced content. He added that the government will support domestic developers of mobile phone applications. ([Source](#))
- **April 9:** Sadegh Ziaee Bigdeli, Vice President of Business Development for Iran said that foreign investors will be given tax breaks over the next five years. ([Source](#))
- **April 10:** The Tenth Meeting of the Economy of Resistance was held in the ICT Ministry, aiming to support domestic content producers. Iran's Supreme Leader Seyed Ali Khamenei called the current Iranian year (1395) as the year of "Resistance Economy and Action" and asked all officials to undertake efforts to support this cause. ([Source](#))

- **April 10:** Hassan Haddadpour, Director of the Iranian Space Research Institute said that the organisation plans to send a satellite into orbit, and build a telecommunication and evaluation satellite. ([Source](#))
- **April 10:** Nursultan Äbishuly Nazarbayev, President of Kazakhstan announced plans to travel to Tehran to meet Hassan Rouhani and Mahmoud Vaezi. Both Iran and Kazakhstan will discuss opportunities of cooperation in the ICT sector. They aim to create a joint working group and to share the experiences of their space agencies. ([Source](#))
- **April 10:** Sadegh Abbasi Shahkoo, Deputy of the TIC said that mobile users will be able to change their operators online within the first three months of 1395 (March 2016 - May 2016). ([Source](#))
- **April 10:** Ali Jannati, Minister of Culture and Islamic Guidance said that Rouhani's government would support freedom of speech and freedom of thought. He mentioned that one of the reasons the recent election proceeded smoothly was because of widespread usage of social media and mobile phone apps. He said that social media gave people a platform to discuss their opinions, and decide what they wanted on election day. ([Source](#))
- **April 11:** Shahkoo stated that the government aims for Mobile Virtual Network Operators (MVNO) to comprise 2% of Iran's market. He added that the TIC has received 51 licence requests, of which only six have been granted. The TIC noted that it aims for the market for MVNOs to be competitive. ([Source](#))
- **April 11:** The Bureau of Technical Studies, Economic Planning and Strategic Supervision in the ICT Ministry has released fresh statistics on the status of ICT development programmes across Iran. According to the report, the highest IDI (ICT Development Index) was measured in Tehran province in the first nine months of 1394 (March 2015 - December 2015), at an average of 7.37. Sistan and Baluchestan province measured the lowest at 2.75. Mazandaran, Semnan and Yazd provinces were the highest ranked provinces after Tehran. ([Source](#))
- **April 11:** Iran's Parliament approved the plan to spend 200 million USD from the National Development Fund to support startups. ([Source](#))
- **APRIL 11:** TCI Spokesperson Davoud Zeraian announced that the organisation aims to create one million new ADSL ports in 1395 (March 2016 - March 2017). He added that the TCI has provided 850,000 new landlines to customers in the past year. ([Source](#))
- **April 11:** For the third time Rouhani reminded the ICT Ministry their priorities on job creation. According to Fars News Agency, Vaezi has

been promising to create 130,000 jobs since 1393, but no updates have been provided to measure the Ministry's progress towards this objective. ([Source](#))

- **April 11:** Mohammad Reza Farnaghi Zad, Head of Public Relations and Information in the ICT Ministry said that users experienced low levels of disturbance over the Iranian New Year owing to the optimisation of services. He additionally said that the number of mobile internet users has increased by 3.5 times. ([Source](#))
- **April 11:** Iran and Kazakhstan have signed an agreement for the IT sector. The agreement includes the creation of technology parks and incubators, alongside the joint development of a 'Technology Transaction Centre', and further collaboration for tech events such as Expo. ([Source](#))
- **April 12:** Behzad Soltani, Director of the Innovation and Development Fund said that Iranians who live outside of Iran can help to support high-risk startup projects. He added that they have received four requests to support high-risk startup projects. ([Source](#))
- **April 12:** Majid Najafian, Head of the Fifth Innovation and Technology Exhibition said that the exhibition will be held in Tehran from May 22 - 25. He said that they aim to attract 80 companies from 15 foreign countries to the exhibition, alongside 70 domestic companies. ([Source](#))
- **April 12:** According to Iranian officials, Iran has imported 1.4 trillion IRR (4.5 million USD) worth of tablets into the country. ([Source](#))
- **April 12:** Vaezi said Telegram will close any pornographic channels within 24 hours of a request from Iran's government. He also mentioned that the ICT Ministry is planning to launch e-Government within the next three months, and SHOMA by the middle of the year (September 2016). He additionally said that a 1,040 billion IRR fund is assigned for 196 IT companies. Vaezi also added that this year between 70,000 to 100,000 jobs will be created in the ICT sector. He also said last year 70,000 applications were made either by local experts or graduate students. ([Source](#))
- **April 12:** The General Assembly of the TCI has agreed to increase investment spending to 60,000 billion IRR (19 billion USD). ([Source](#))
- **April 13:** ICT Ministry announced that internet prices will be decreased by 15% by May 20, 2016. According to Vaezi a committee was set up with the CRA last year to bring about a decrease in internet tariffs. He added that the ICT Ministry previously lowered prices by 20%, but the changes were not seen owing to users' high levels of usage. ([Source](#))

- **April 13:** Khosravi said that domestic Internet bandwidth will increase to 6.5 times the current level within the next two years. He added that Iran's internet bandwidth has increased by 4.5 times since Rouhani came to office. ([Source](#))
- **April 13:** In a meeting between officials from the ICT and Interior Ministries, an agreement was reached that online dating sites should be licensed instead of blocked altogether. ([Source](#))
- **April 13:** The TCI and Italtel has signed an agreement for the development of the country's telecoms network equipment. Italtel will help TCI with the development and modernisation of Iran's telecommunications network over 18 months. ([Source](#))
- **April 16:** Deputy ICT Minister Morteza Barari announced that the government has been able to expand access to 4G LTE technology in Iranian villages. He added that the digital gap has decreased between Iran's provinces in the past two years, stating that the ICT Ministry aims to provide 4G access to 25,000 villages within first three months of 1395 (March 2016 - May 2016). ([Source](#))
- **April 16:** Vaezi announced that the ICT Ministry will build a data center for Iran Post that will help the company to develop electronic mail services. According to Vaezi, this will also solve Iran Post's bandwidth problems. ([Source](#))
- **April 16:** Abbasi Shahkoo, Deputy Director of the TIC said that licences for MVNO will be issued in August 2016, and that they can commence operations from September 2016. He added that the TCI has approved ten MVNOs so far. ([Source](#))
- **April 16:** Manouchehr Manteghi, the Head of the National Space Centre (NSC) said that they are aiming to work in a more organised manner this year, and to launch satellites on schedule. He mentioned that the NSC would make use of domestic and international opportunities to make this happen. ([Source](#))
- **April 16:** Parviz Karami, Vice President for Science and Technology announced that an [online encyclopedia](#) has been launched targeting Iranian teens. The website aims to educate teens about culture, science and technology, and help them to learn more about modern business and the knowledge-based economy. ([Source](#))
- **April 17:** Firouzabadi announced that Iran is determined to create three messaging apps. Previously, Vaezi promised that the ICT Ministry would provide financial assistance to the developers of a domestic messaging app. ([Source](#))
- **April 18:** Deputy ICT Minister Nasrollah Jahangard asked for the acceleration of work on the Geocoded National Address File (GNAF) project, and requested that government organisations share their location information with the GNAF project. ([Source](#))

- **April 18:** Amidian appointed a number of directors and advisors to the CRA ([Source](#)):

APPOINTEE	POSITION
Vali Allah Moradi	Director of Development and Public Service Monitoring FAVA (USO)
Gholamreza Khaksar	Head of the Office to Monitor Radio Services
Seyed Mohammad Emami	Director of the Office to Monitor Communications Services
Mehrdad Veisi	Head of the Office to Monitor IT Services
Alireza Asgharian	Executive Advisor to the Deputy for Supervision and Regulation
Garshasb Jamshid Nejad	Executive Advisor to the Department of Technical Reviews and Licensing Regulation

- **April 19:** Vice President Eshaq Jahangiri published a list stating the duties of various ministries regarding the development of the 'Resistance Economy'. The ICT Ministry has six stated responsibilities: ([Source](#))
 - ◇ Building remote sensing satellites and domestic satellites.
 - ◇ Creating an 'ICT corridor'.
 - ◇ Doubling the production of local content and the digital economy with the assistance of the private sector.
 - ◇ Increase the level of user access to SHOMA with 20 Mbps connections and the development of data centers and content distribution network.
 - ◇ Development of e-Government initiatives.
 - ◇ Organising national scarce resources such as frequencies and numbers.
- **April 19:** Board members at the Mobile Telecommunication Company of Iran (MCI) released their annual performance report for the MENA region. Below are some highlights from the MCI annual performance report:
 - ◇ MCI has provided 88 different services and products since 2012. 24 new services were provided in the last Iranian year (March 2015 - March 2016).
 - ◇ MCI gained 560,000 new permanent contract customers, and 6,480,000 pay as you go customers.
 - ◇ MCI gained a total of 7 million new users last year, bringing them to a total user base of 77,900,000 users.
 - ◇ MCI penetration rate is 80.2%.
 - ◇ MCI SIM card market share is 59%.
 - ◇ MCI has 100% 2G network coverage in cities and inhabited islands, and 86.9% in villages. In total, 1,242 cities are covered by MCI.

- ◇ MCI has international roaming agreements with 270 operators across 112 countries.
- ◇ MCI has 6,910 3G network sites and 470 4G network sites across the country.
- ◇ Mobile internet network usage has increased almost four times in the past year.
- ◇ MCI ranked first in terms of number of subscribers in Iran, Middle East, and South Asia, and 15th in the world. ([Source](#))
- **April 19:** Hossein Madanipour, the Director of Control and Coordination Network Management in the TIC said that Iran spent 2.2 billion minutes on international calls in the last Iranian year (March 2015 - March 2016) — around 28 hours per person per year. He added that 1.2 billion minutes were outgoing traffic, and 1 billion were incoming calls. ([Source](#))
- **April 19:** Vaezi said SMS messages from banks will not be categorised as advertising SMS messages, and will not be restricted. Previously, mobile users were unhappy about receiving unsolicited SMS advertisements. The ICT Minister was questioned by an MP on this issue, and he promised that the issue would be resolved. Vaezi announced that users will be able to request SMS messages to stop. ([Source](#))
- **April 19:** Mehdi Mohtashami, Deputy ICT Minister said that Iran and Turkey have signed a number of agreements within the IT sector, including agreements to transfer updated technologies to Iran. ([Source](#))
- **April 20:** Mohsen Bahrami said Iran and Russia have agreed to work together on their space programs. He added that Russia will help Iran by:
 - ◇ Updating hardware and software to receive and process information from the Alborz (Mahdasht) satellite.
 - ◇ Providing complete sensing satellite systems and technology development to meet the needs of satellite control stations and enable them to receive images.
 - ◇ Launching student satellites
 - ◇ Supporting the aerospace sector ([Source](#))
- **April 20:** The ICT Ministry will provide funds to domestic computer game developers with special flexibility and low interest. Recipient companies should be at least three years old. Funds will be given to companies after the approval of their projects by the National Foundation of Computer Games (NFCG). ([Source](#))
- **April 22:** The ICT Ministry released a series of indicators for the state of ICT in Iran. According to these new statistics, 16 million Iranians are using mobile internet, and 8.5 million are using ADSL

internet. Here are some highlights from the report. Note that data is from 2007 - December 2015. ([Source](#))

INDICATOR	STATISTICS
Landlines in use	30,082,000
Mobile SIM cards	147,750,077
Active and usable mobile SIM cards	74,218,815
Landline penetration rate	38.19%
SIM card penetration rate	94.22%
Public phones installed	139,729
Number of communications offices and rural ICT centres	8,443
Rural households with landline connections:	47,984
ADSL lines installed	9,750,821
ADSL lines active	8,633,861
Users of mobile internet	15,913,352
Iran's international bandwidth	306 Gbps (from 6.05 Gbps in 2007)
Domestic bandwidth	4000 Gbps (from 31 Gbps in 2007)

- April 23:** In his recent visit to Azerbaijan, Vaezi said that Iran and Azerbaijan are keen to collaborate in the ICT and aerospace sectors. He added that Iran and Azerbaijan have reached an agreement over ongoing frequency disruptions for mobile, TV and radio networks, whereby some users in Iran's border regions have complained about being charged for international roaming on their monthly bills. Vaezi promised to solve this issue by speaking with technicians and Iran's neighbours. ([Source](#))
- April 24:** Barari announced that Iran's ICT share of the world ICT market is 350,000 billion IRR (11 billion USD), and stated that it should be expanded to 1,400,000 billion IRR (46 billion USD). He mentioned that 80% of the Iranian market belongs to communication technology, and 20% to IT. ([Source](#))
- April 24:** The National Conference on Security of Smart Mobile Systems will be held at the Institute of Communications and Information Technology of Iran from 12 - 13 July 2016. The conference aims to review the role of the government in the growing use of smart systems, and the responsibilities of developers and distributors in the production and distribution of digital security applications. ([Source](#))

- **April 25:** Davaie announced that the government will support the construction of an ICT Technology Park for companies to work on projects related to the Internet of Things (IoT). The park will be located near Karaj. ([Source](#))
- **April 25:** Iran Post signed a deal with Rightel to update their customers' address information. Iran Post will allow Rightel to place transmission towers at 17,000 locations belonging to Iran Post and will share 45 million users' address details with Rightel. ([Source](#))
- **April 25:** The ICT Ministry and the Hope Entrepreneurship Fund will develop a 150 billion IRR fund for startups and new companies in the ICT sector. 50 billion IRR of funds will come from the ICT Ministry, and the rest from the Hope Entrepreneurship Fund. According to the ICT Ministry, startups and new businesses will be able to take loans of up to 1 billion IRR at low interest. ([Source](#))
- **April 26:** Hossein Mehri, Director of Iran Post said that if the Guardian Council approves fresh parliamentary legislation regarding his company, Iran Post will be placed under government ownership, and renamed to the National Post Company of Iran. He additionally said that three private companies will work alongside Iran Post in the near future. Mehri also mentioned that the lifting of sanctions will help Iran to cooperate with major international mail carriers. According to Mehri, Iran Post had 7.5 trillion IRR (230.5 million USD) profit in the last Iranian year and their aim is to increase the profit to 10 trillion IRR (329.3 million USD) this year.. ([Source](#))
- **April 26:** Fereidoun Ghasem Zadeh, a faculty member at Sharif University of Technology said that Iran's IT market is currently worth 21 billion USD, and will increase to 30 billion by 2020. ([Source](#))
- **April 26:** The TCI and the government agreed on new board member appointments to the TCI and the MCI. The new board members of the TCI are:
 - ◇ Barat Ghanbari
 - ◇ Mozafar Pourranjbar
 - ◇ Hamid Reza Rafiei
 - ◇ Latif Vasli

The new board members of the MCI are:

- ◇ Seyed Asadollah Dehnad
- ◇ Mohammad Reza Modares Khiabani
- ◇ Ali Baghaie
- ◇ Behzad Khan Sefid
- ◇ Mojtaba Jafari ([Source](#))

- **April 27:** Mehdi Yousefi, Director of the Pars Special Economic Energy Zone said they have signed a contract worth 24 billion IRR (795,000 USD) with startup companies from the Science and Technology Park of Bushehr. ([Source](#))
- **April 27:** In a meeting with developers, Sattari said that the contribution of startups to Iran's GDP remains very low, and should be increased. He also mentioned that 2,300 startups are currently operating in Iran, at a profit of 120,000 billion IRR (3.9 billion USD). In this meeting Hesam Armandahi, Director of Cafe Bazaar—the Iranian analogue of Google Play—said that 16,000 app developers managed to create 366 billion IRR (12 million USD) profit over the past five years. He said that this demonstrates Iran's potential for app development and startup companies. ([Source](#))
- **April 29:** In a meeting with his deputy minister and the operating director of the private sector, Vaezi discussed plans for the development of the country's broadband network in a meeting with his deputies and directors of communication operators. According to Vaezi, the TCI has great potential to create jobs and expand Iran's national broadband network. ([Source](#))
- **April 30:** Javad Movahed, Director of Public Relations at SARAMAD announced that the MCIG will provide 7.7 billion IRR (255,000 USD) of e-publishing vouchers at the Tehran International Book Fair to support and incentivise digital content production. He added that 130 digital publishers were registered for the Tehran International Book Fair. The 29th [Tehran International Book Fair](#) will be held from 4 - 14 May in Tehran. ([Source](#))

4



Civil Society, Professional Organization Statements



- **April 1:** The International Telecommunication Union (ITU) has released its latest [report](#) on the status of global ICT development in the world in 2015 . According to the report, Iran ranks 7th in the ICT Price Basket, and 19th in the Global Cybersecurity Index out of 194 countries. ([Source](#))
- **April 4:** Iran will hold a digital content creation competition. According to Mehr News agency, the competition will aim to encourage individuals to create both scientific and practical contents. The competition will be held at the Sharif University of Technology over two days, and include the following six categories: religion and culture, medicine and health, entrepreneurship and the knowledge-based economy, technical sciences and engineering, art and architecture, banking and payment technology. ([Source](#))
- **April 4:** Morteza Mousakhani, Director of the Iranian RoboCup National Committee, announced that Iran's Eleventh Open Robocup competition will feature 624 teams at the Tehran International Fair from 5th April 2016. Mousakhani added there will be 14 non-Iranian teams from 9 different countries. ([Source](#))
- **April 10:** A number of Iranian internet researchers denied American claims of a cyber attack being waged against U.S officials. It is unclear who these researchers are, as they are unnamed in the open letter. ([Source](#))
- **April 11:** The National Conference on Animation, Games, Knowledge Production and Global Trade will be held in Tarbiat Modares University from May 14 -19 2016. The conference aims to advance religious values, dignity and the spirit of sacrifice and martyrdom amongst younger generations through animation and computer games, while attracting domestic and foreign investments to support the computer game industry. ([Source](#))
- **April 11:** According to ISNA News Agency, the value of mobile phone imports fell to 203 million USD in 1394 (March 2015 to March 2016). In 1393 mobile phone imports were worth 306.2 million USD. ([Source](#))

- **April 11:** According to Mehr News Agency, the Acceleration Center TrigUP asked business owners and startup companies to submit their ideas. The centre aims to provide startups with advice and support to become successful. (Source)
- **April 13:** An Iranian IT company managed to design finance management software and hardware based on Iran's taxation laws. The product was made by a startup company based in the Mazandaran Science and Technology Park. Mohammad Pourasadollah, the company director said that their product is much cheaper than non-Iranian alternatives, and added that it would be available on the Iranian market shortly. (Source)
- **April 15:** Javad Amiri, Deputy of Supervision and Evaluation at the NFCG said that Iran should raise the cost of foreign games in order to protect the domestic game industry, as well as intensifying licensing requirements for foreign companies looking to sell products inside Iran. He added that computer games would not sell for less than \$70 internationally, but that games would be sold on the Iranian market for 20,000 IRR (0.65 USD), disincentivising domestic producers. (Source)
- **April 16:** Naser Ali Soa'adat, Head of the CTU said that the private sector is keen to support the government with the implementation of e-Government. Vaezi promised that e-Government would be launched in the first quarter of 1395. (Source)
- **April 20:** Bagher Bahri, Deputy Director of the Computer Trade Union (CTU) said that IT companies from seven countries are keen to invest in Iran's market. The countries include: Turkey, Ireland, Moldova, France, Bulgaria, Italy, and Canada. He noted that some European companies are concerned about engaging in trade with Iran, though he expressed hope that the lifting of international sanctions will encourage them to engage with the Iranian market. (Source)
- **April 23:** According to Tasnim News Agency, shareholders of MTN Irancell are considering investing in a number of infrastructure projects including Iran's fiber optic network and Internet Protocol television (IPTV). (Source)