

## Internet Governance from the Regional Kurdistan of Iraq

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### **Abstract**

*The Internet is an important part of modern life that can perform lots of tasks in an easy way. The Internet is often depicted as a network of networks as it is not a single physical entity. Moreover, the Internet interconnects millions of networks and links to hundreds of thousands of computers around the world. As the Internet develops, the question of how the Internet should be governed becomes more complex. This paper sets out a deeper discussion on the status of the Internet in the Kurdistan Region of Iraq. Furthermore, it illustrates how the government controls private companies that provide the Internet. These companies receive the Internet from several countries, namely, Iraq, Iran, Turkey and the others such as Azerbaijan. However, any problems in the Internet of these countries will result in the Internet disconnection in Kurdistan. Due to the lack of Internet filtering, lots of websites have caused many social issues such as child abuse and pornography. This research also examines how these companies have provided the users with fake Internet capacity and how such untrue promises have usually caused people to confront economical issues.*

**Keyword:** Internet Governance; ICANN; WGIG; DNS; ISP; Protocol; Internet filtering; Kurdistan; Iraq

### **1. Introduction**

The Internet is a term referring to a huge computer networking in the world which has been invented a few decades ago. It is also the most popular technology used by human beings for a variety of purposes, namely, academic purposes, business and communication purposes worldwide. Furthermore, the Internet is a wonderful invention used by many countries for positive or negative purposes. The Internet works not because of government permission or intergovernmental conformity—rather it works due to the fact that its governance is collaborative, open, transparent and comprehensive. In addition, it allows for innovation without agreement and encourages the free flow of ideas and the exchange of data or information crossways borders. Working Group Internet Governance (WGIG) defined the Internet governance as: “the development and application by governments, the private sector, and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programs that shape the evaluation and use of the Internet” [1].

Although, the Internet governance (IG) is required, it is phased challenges. The challenges have continuously and linearly increased due to increase affects on modern life. Nowadays, the government has several issues to control Internet policy due to the fact that the Internet is a network of networks, much of which is built up and

managed by the private sector, so it is highly difficult to control by the government [2]. What's more, Muller stated that the significance of Internet in 'economic', 'social' and 'political' life has grown; as a result, the government exerts to control it [2]. Understandably, it can be stated that the Kurdistan region of Iraq (KRI) is one of those countries that uses the Internet to obtain benefits. In Kurdistan, there is no private Internet; therefore, people can have the Internet from some companies which receive it through Iraq, Iran or Turkey and the other countries. These companies make an economical issue for the users and government since they spend lots of money by transferring the Internet via those countries. Simultaneously, there are no rules to control the Internet companies in Kurdistan; therefore, those companies have exploited the condition for obtaining more and more money by providing a fake Internet capacity. In general, WGIG established several keys of public policy issues that are potentially related to the IG [1]:

- Infrastructure and the management of critical Internet resources are the major issues, since these issues are matters of direct relevance to IG.
- Several issues are directly related to the IG while using the Internet, such as cybercrime, spam and network security.
- Issues which are related to the Internet, but have an influence much wider than the Internet, namely, “E-

commerce and Trade", "IPRs (Intellectual Property Rights)", "Liberalization, Competition policy, Privatization and Regulations".

- In terms of development, the developing countries are also the other issues that relate to the IG.

This paper is about the Internet Governance in KRI, so it will discuss the Internet issues in KRI. This research is also going to provide a brief history of Internet in Iraq. Moreover, it provides several techniques that could be used to make the Internet filtering, and gives the importance of Internet filters. It also gives the information about how the status of the Internet in KRI is. Two Decades of Iraqi Internet

The electronic victory has been achieved after long frustration and defeat to set .iq domain name in Iraq. During Saddam Husain's rules, due to the United Nations' sanctions, Iraq had been prevented from bringing the most Information Technology. Meanwhile, the access to the Internet was restricted strongly by Iraq's Baath regime. Iraqi authorities had employed a unique system of Internet use. Under the Saddam's regime's power, the government had the full power of censorship upon 65 Internet centers (Iraqi cafés for Internet use). In addition to that, Iraqi users had limited access to internet web pages, as well as all email services were blocked in order to control the General Company of Internet and Information Services (GCIIS), so a subscription to these e-mail services was very different from a subscription to those available on the Internet. Censorship department was provided two channels, such as 'Orouk' and 'Woraka'; therefore, all messages that sent or received from the outside world had to go through these two channels.

The Iraqi's domain ("iq" domain) was assigned by a company outside Iraq. That company which was assigned by Internet Corporation for Assigned Names and Numbers (ICANN). ICANN aims the internationally organized nonprofit corporation that controls the key aspect of the web. Texas InfoCom Internet service provider, who hosted many websites in the Middle East had controlled .iq in 1997. The domain never been activated by InfoCom. However, FBI cited that the InfoCom had been accused of having possible violation by doing business with Iraq.

After freedom operation in Iraq by US in 2003, the US temporally leader wrote a letter to ICANN, in order to give the .iq to the new government, but it was refused. After then, the ministry of Science and Technology wrote a letter to ICANN, explaining that they have been chosen as a completely responsible for controlling .iq in September 2004. Nevertheless, a month later another letter had been received by ICANN from Iraq's interim Prime Minister Iyad Allawi requesting for the .iq domain. Those letters had been refused continuously by ICANN. Andrew Robertson stated that the organization does not comment about such decisions publicly. At the end, after a new Iraqi government took power in July 2005, the Media Commission which counterpart to the US Federal

Communications has been selected by ICANN to take control of .iq domain.

Due to the significant roles of the Internet on the modern life, Iraq's Government has started to establish several projects for providing high quality of transferring the Internet. The sea cable project is one of the strategic projects in Iraq, which has been started in 2005 in order to connect Iraq with Arab Gulf. The project was expanded after 2007 due to the strategic geographical location of Iraq which links Asia, Europe and America continents [3].

There are two projects for Sea Cables:

1. (FLAG-FALCON) implemented by Reliance Company that is one of the well-known Telecommunication Companies in India, capability of 444 GBI (STM1) for 15 years, costing 60 million USA dollars. It is applied from Iraq in two ways:
  - A. Fao – Iran – Oman to India towards countries of East Asia, then to Egypt towards countries of Europe and America.
  - B. Fao – Kuwait – Saudi – Bahrain – Qatar – Oman – India towards countries of East Asia and to Egypt towards Europe and America.

According to Iraq Telecommunication and Post Company (ITPC) (2010), the primary importance of this project is to build the circularity of the network services in the Arab Gulf. That means there will be two routes for Internet's services transmission. Therefore, when one of them is unable to serve it will be possible to use the other services. It can be said that this project will solve Internet down in Arab Gulf. Moreover, there are efforts at the moment to provide capabilities for all ISP, mobile, telecommunications and oil companies.

2. The second way (for 15 years costing 35 million USA dollars (STM1) with 144 GBI capabilities) is implemented by ITC Company. It starts in Iraq (Fao) – Kuwait – Iran – Saudi – Bahrain – Qatar – Emirates (Fujairah) towards India (Mumbai) to the countries of East Asia, and towards the Red Sea to Egypt then to the Mediterranean towards Italy (Mazara) to Central Europe.

The other project is known as TATA for the 4<sup>th</sup> cable is currently running to develop the communications sector in Iraq. The ITPC is expanding the National Information Network Project for deploying Internet services by transmission to IP and using it in Fiber optic To The Home (FTTH). FTTH is the technology of conveying a high-speed of networking, telephone service and digital TV to home via using Fiber Optic cables [4]. Now it is implemented and is in a continuous development in Baghdad and nine other provinces, namely, Karbala, Misan, Salahaddin, Muthanna, Basra, Wasit, Najaf and Ninawa.

#### Data Gathering Techniques

Several techniques have been applied to gather data on the Internet in KRI in this paper, some of these techniques are being discussed in the following:

1. Distributing and collecting questionnaires which have a limited and specific use in information gathering. The benefit of a questionnaire is that it enables the project team to collect information from a large number of stakeholders. Even if the stakeholders are widely distributed geographically, they can still help collect huge quantity of data through questionnaires. In our questionnaires, we focus on open-ended questions (questions that encourage discussion and elaboration). Although a questionnaire can contain a very limited number of open-ended questions, stakeholders frequently do not return questionnaires that contain many open-ended questions. We distributed the questionnaires to 80% of related sources and we receive the replay of 50% of them. After collecting questionnaires we review them thoroughly to make sure that the gathered information is valid. We use a questionnaire to obtain preliminary insight on the information needs of the various stakeholders. This preliminary information help us to determine the areas that need further research with document reviews, inter- views, and observation.
2. Reviewing existing reports, forms, and procedure descriptions. We use two sources of information for existing procedures and forms: first external; a potential source of important information. In this procedure we have focused on many customers who have the best practice with the Internet. The second source of reports, forms, and procedures is the existing business documents and procedure descriptions within the companies. This internal review helps speeding up the process.
3. Conduct interviews and discussions with stakeholders. Interviewing stakeholders is by far the most effective way to understand regulations, limitations and rules. It is also the most time-consuming and resource-expensive option. In this method, we meet with different levels of administrators from ISP Company to the ministry of communications and transportations. A list of detailed questions is prepared and discussed. Obviously, this process may take some time, so it usually requires multiple sessions with each of the stockholder levels. In order to conduct effective interviews, we organize this work in three areas: preparing for the interview, conducting the interview and following up the interview. Figure 1 is a sample checklist that summarizes the major points to be covered.
4. Observe and test, along with interviews, we conduct another useful method of gathering information that is observed and test directly multi ISP work, contract and services. As a result, we achieved wide experiences about Internet services and providing in KRI. This first hand experience is invaluable to understanding exactly what occurs in processes.

#### Impact of Corruption on Internet in Kurdistan Region

Absence of transparency and high level of corruption in Iraq and Kurdistan causes many issues. Some of these issues are described in the following:

#### 1. Internet providing monopolization

ISP's are required to have permission to work. Obtaining Licence from local authority is not transparent. Giving permission to any company to provide Internet in Kurdistan region required political support. Even those legal companies have limited area for covering. Consequently, some companies have strong existence in some place. However, they rarely exist in other places, i.e. Sulaimanyah vs. Erbil and Dohuk. This situation is clear and we faced this reality in our research. Although, we surveyed ISP companies in both area, but; since we are from Sulaimanyah University we did not receive any cooperation from Erbil ISP companies.

#### 2. ISP company and lack of data

Currently most Iraqi companies are managing their data on paper base, so documentation is weak. This situation affects our survey and reflected on filling our questioner. As well as, the situation disrupted in Internet providing monopole negatively impacted on gathering data for this research from ISP companies.

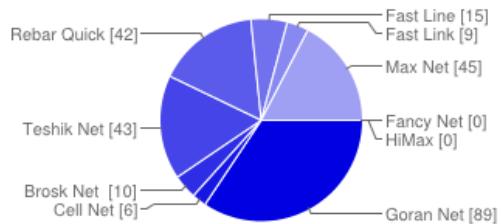


Fig. 1 A- Current distribution of users

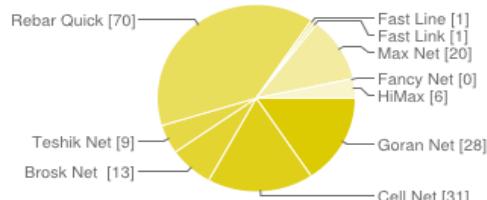


Fig.1 B- Past distribution of users

#### 3. Quality of providing Internet services

As a result of corruption, Internet providing has been monopolised based on who is supported by local government. Therefore, the quality of service is not a first measure to evaluate companies. Consequently, customers paid for a type of services, but she/he is receiving less than they promise. For example, most ISP fails to provide Internet with the speed that they promise the customers and contracts.

The impact of corruption is shown by our survey in this study. Due to this corruption and the Internet is providing monopolization in each area in Kurdistan Region, Reber Quick had faced a problem a year ago; the result was many users left Reber Quick, therefore, Reber Quick users has been decreased from 39% to 16%. This result is shown in the below figure.

### Domain Name System in Kurdistan

The Domain Name System (DNS) is a distributed database which provides mapping services from domain name into Internet Protocol (IP) [5]. DNS assists Internet users contact web sites or other resources in Internet with simple domain names, instead of long numeric IP addresses. Since the operating systems cannot understand domain names, the DNS is a way which Internet domain names are translated and located into IP addresses which are logical addresses of devices. Furthermore, according to [6] the DNS allows users to refer to web sites and other resources using easier-to-remember domain names (such as "www.icann.org") rather than the all-numeric IP addresses (such as "192.0.34.65") assigned to each computer on the Internet.

Every domain name is composed of a series of characters which called "Labels", then these labels separated by dots. There are several top level domain names [7]:

- "org" which indicates for the "Organization", and mostly used by the organizations.
- "com" that is derived from the word "Commercial", and mostly used by the Internet hosts.
- "ac" which indicates for the "Academic", and mostly used by the academic establishment, namely, Universities, colleges, and research institutes.

As we have mentioned previously, there is a classification, which can be used to make a comparison among various kinds of websites for domain names, namely, 'gov' indicates for Government websites, 'edu' for Education websites, 'ac' for Academics websites, 'net' for Network websites, 'com' for Commercial websites, and so on so forth. However, it is worth mentioning that domain name classification cannot be seen in Kurdistan, as we can see it from the table 1. Therefore, it has been found that Kurdish websites are hardly recognized or identified by foreign people, who cannot write as well as read Kurdish language.

### Isp Companies and used Technologies in KR

Since 2005, the number of ISP that provides the Internet in KRI has been increased since the number of Internet users rapidly increased in Kurdistan. On 2005, all companies were the base (Iraqi Internet Service Provider (IISP)) that provides the Internet for companies. Therefore, they were directly providing Internet to users. However, nowadays there are lots of companies, which

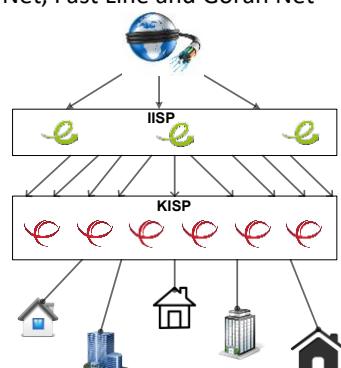
provide Internet services, most of them are the branch (Kurdistan Internet Service Provider (KISP)) of the main base as it can be seen in figure 2.

**Table 1** Domain Name classification in KRI

Sq	Name	Web address	Domain
1	Kurdistan Regional Government	www.krg.org	org
2	Kurdistan Region Presidency	www.krp.org	org
3	Kurdistan Parliament	www.perleman.org	Org
4	Ministry of Higher Education and Scientific Research	www.mhe-krg.org	Org
5	The Sulaimania University	www.univsul.org	Org
6	Hawler Governorate	www.hawlergov.org	Org
7	Duhok Governorate	www.duhokgov.org	Org
8	Ministry of Transportation and Communications	www.moc-krg.com	Com
9	Sulaimanyah Governorate	www.suligov.com	Com
10	The Salahaddin University	www.suh.ac	Ac
11	The University of Duhok	www.uod.ac	Ac
12	The Koya University	www.koyauni.ac	ac

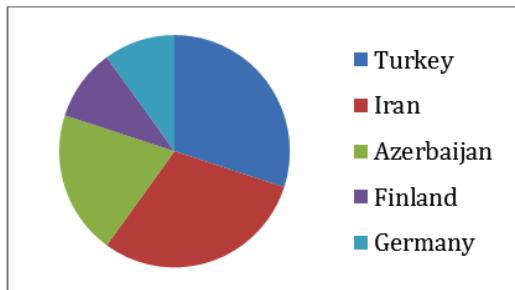
The below company names are those companies which helped us to obtain relevant information about the circumstances of the Internet services in KRI.

"Newroz Telecom, Nawand Telecom, Tarin Net, Seven Net Layers, Regional Telecom, Via Telecom, Link-Tech, Tel HI Telecom, Very Nos, 4 – Time, Brosk Net, Cell Net, Teshik Net, Pasha Net, Fanos Telecom, Spider Net, Zana Mohammed Mahdi, Zanyar, At Net, Dost Net, Bawa Shaswar, Birmingham, Zozik Net , TAC Tic Net, K.I.T.S, Betel, Fancy Net, Fast Line and Goran Net"



**Fig. 2** Base (IISP) and Branch (KISP) ISP companies

Figure 3 presents the Internet services provided by several countries (i.e., Turkey, Iran, Finland, Germany and Azerbaijan) to Kurdistan.



**Fig. 3** countries which provide the Internet to KRI

According to all the companies which provide the Internet service in KRI, the number of Internet users has increased rapidly in the last five years. Increasing the number of users lead to the capacity of the Internet has to increase as well. In the initial stage, the number of Internet users was little. By then, the number of users increased quickly; so, nowadays there is almost an Internet service at every home. In the beginning, the capacity of the Internet was too slow (250 Kbps), whereas the Internet capacity has increased to 8 Mbps since 2013. Table 2 shows the average bandwidth of the IISP and KISP.

**Table 2** Internet Bandwidth of IISP and KISP

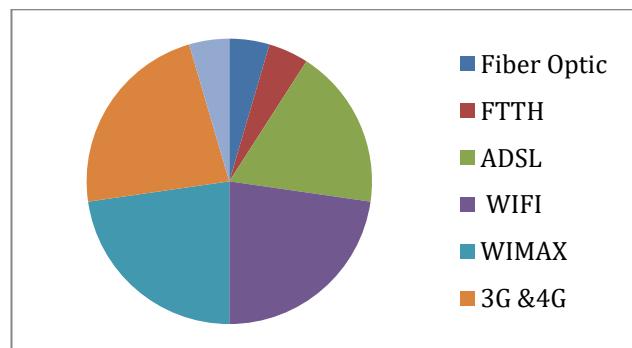
Type of Company	Average bandwidth	Received Bandwidth
IISP	64 stm	64stm
	40 Gbit	Multiple
KISP	600MBit/s	600 MTZ
	3 Gbps	4Gbps
	32 Kbps	400Mbps
	320 Mbps	320Mbps

**Long Term Evaluation (LTE) technology** is one of the most significant technologies that the Kurdistan Region has been trying to apply to improve the Internet. According to [8], LTE is a wireless broadband technology that was designed to hold up roaming Internet access through cell phones and handheld devices. For that reason, LTE offers considerable improvements over the older cellular communication standards. In addition, there are some referring to it as a 4G (fourth generation) technology along with WiMax. Therefore, the Kurdistan Ministry of Transportation and Communication in 2012 announced that all the private companies who provide the Internet should attempt to apply LTE since LTE gives faster data rate transfer which in higher upload and download rate. Furthermore, it would also reduce the issue of delaying in the Internet connection, when the rates are increasing [9].

This is an announcement number one of the Kurdistan Ministry of Transportation and Communication in 2012:

"For the reason of improving and developing the Internet services in the Kurdistan Region, our Ministry decided to apply LTE technology, therefore all the companies who provide the Internet should change their technologies to LTE (Ministry of Transportation and Communication of Kurdistan, 2012).

There are some other technologies, namely, Fiber Optic, FTTH, ADSL, WiMax, 3G, 4G and GPRS which have been used to provide the best Internet services. The following diagram demonstrates the use of these technologies in Kurdistan and which one is mostly being used.



**Fig. 4** Use Internet technologies in KISP

#### Internet Filtering

Internet filter is a hardware or software which restricts the information delivery over the Internet [10]. Filters can be installed on the servers of an ISP, proxy server or Local Area Network (LAN). It can also be installed on the individual computer, so by using filtering we can block any unauthorized access to websites, emails, chatting, or the other Internet based communications.

Obviously everywhere in the world, there are lots of arguments and discussions about using the Internet and implement as well as practice the Internet filtering. One of the most important subjects of the Internet Governance is the Internet Filtering for the free national security and international enforcement, privacy, human right and expression. Furthermore, there is some Internet Governance debates about the court cases and legislation to find the balance between the website content and the freedom speech. It can be achieved by practicing the best Internet filtering to protect human right [11].

According to [12], in each country, there is a score of scale that reflects on the observed levels of filtering type:

- Political:** this mainly focuses on websites that involve in opposition impression, such as a religious movement, freedom of expression and human rights.
- Social:** this category primarily related to prohibited materials like illegal drugs, sexuality, gambling and fraud.
- Conflict/ Security:** this is focused on the sensitive information. Information is related to border disputes, military groups and armed conflicts.

4. **Internet tools:** this category includes email, Internet hosting, Internet Protocol service.

### Filtering Technology

There are some basic technologies which can be used for filtering today, namely: filtering by using software is considered as the most common types of filters. It can be freely downloaded or can be bought, subsequently installed on computers. This type enables clients to monitor the communication between the Internet and clients' computers. In addition, software filters are usually the most robust, and offers the greatest level of guard, not only from pornography, although from the other illegal websites. According to [10], DNS is another choice to provide filtering like OpenDNS. It will possibly work with your existing network as a free, so you do not need to purchase additional hardware, but it required update the primary and secondary DNS entire at the router to point to the OpenDNS servers.

There are several physical devices (e.g., DSL router and modem) that users should utilize to build a connection between the Internet and computer. Some of these devices have built-in software which filters the Internet [13]. Therefore, users do not need to download or purchase any software to install on their computer. Finally, the type of hardware is usually simplistic and would just avoid access unsuitable content. Internet Proxy Sometimes, ISPs will provide filtering as part of their service. There is nothing to install to your computer, however you should call a proxy which will filter all your content on the Internet. This type of filter is usually simplistic, and would not include the robust features of a software filter.

Deep Packet Inspection (DPI) is another type of filtering that can be used to inspect data sent from one PC to another over a network [14]. According to [15], DPI is a complicated method of packet filtering which can be operated at the application layer of the OSI (Open System Interconnection) reference model. Users can obtain many benefits by using DPI due to the fact that it enables its users to identify, classify, track down, reroute or stop packets with unwanted code or data [15]. Users should be aware about using the DPI technology, because the DPI like the other tools can be used for bad or good purposes [16]. According to [14][16], there are several essential uses of the DPI, such as network management, government surveillance, network security, targeted advertising and governing copyright infringement. The government could obtain lots of benefits from using the DPI: monitor and censor the information of the citizens which are receiving and distributing over the Internet. In most countries like USA, ISPs has been using DPI for the purpose of network management, for example, the cable operated Comcast began to block P2P (Peer-to-Peer) data transfer for its users using DPI. There are many functions that could be taken from the DPI, for instance, Network Security, Copyright enforcement, Network Management, Surveillance, Content Regulation and Ad injection.

Nowadays, countries usually have rules as well as policies about the Internet filtering for instance, United States, United Kingdom, France, German, and the other European countries. However, there are several rules, which are the same for most countries, such as the Copyright [17], Intellectual Property [18] and right to protect child pornography [19]. We should beware about using software or hardware to access the Internet since hackers can utilize bypassing techniques, namely, FreeNet and TOR (a form of tunneling to attack the Internet [20]. As well as Botnets, change the DNS, and change IP address [11] or using protocols.

### Filtering Protocol

Several important protocols of filtering categorize the types of filtering scales, these types of filtering are illustrated in the following [12]:

1. **Pervasive filtering:** this is one of the important types of filtering that related to the political issues which it is becoming more pervasive and more restrained over time, it is a fundamental of law. This type of filtering is also monitoring citizens of activities, namely, what they say, hear and see.
2. **Substantial filtering:** filtering social content that engaged with political motivation by the government.
3. **Selective filtering:** specifically targeted that filtering which blocks a number of sites that contain unusual categories.
4. **Suspected filtering:** it involves two types of filtering. Firstly, server level filtering: it targets particular sites that are holding a spam. Secondly, client level filtering: check Internets' mails that tagged by suspected spam before forwarding to the recipient.
5. **No evidence of filtering:** in this type of filtering, there is no evidence to indicate that the website is to be blocked. Furthermore, it is difficult to find the evidence of specific filtering sites, such as blog and forum.

### Internet Filtering in Iraq

There is no formal written national of Internet filtering policy in Iraq, also no evidence of the ISP practices filtering. On the other hand, the Iraqi government has confirmed several plans to block 'immoral' site's content, control Internet café and monitoring Internet activities. In addition, the Iraqi government has security conditions that prevent a variety of Iraqi from accessing the Internet. What is more, in KRI there is no filtering process to filter the Internet services; as a result, cause to produce issues, such as politics, religion and child abuse. However, there are some Café shops that filter the Internet services. People in KR classified in terms of filtering into two groups:

- a. First group: they do not want to have filtering on their Internet since they think it causes less freedom expression.

b. Second group: they want to have filtering on their Internet services to save their relatives from some improper websites. The basic motivation of this group is culture and religion.

In general, un-filtering Internet causes limitation uses of Internet due to child abuses issue. We suggest hybrid solution between the above two opinions. Some kind of elasticity of the topic, such that ISP companies offer filtering service and configured based on customers decision. The survey conducted in this study that 71% indicated that they prefer filtering the Internet to prevent child pause and pornography.

Table 3 illustrates Internet filtering in some countries (0 no evidence, 1 evidence, 2 selective, 3 substantial, 4 pervasive)

**Table 3** Internet filtering in some countries

Country	Political score	Social score	Tools score	Testing date
Iraq	0	0	0	2009
Jordan	2	0	0	2009
Kuwait	2	4	4	2009
Saudi	3	4	4	2009
Syria	4	2	4	2009
US	0	0	0	2009
France	0	0	0	2009
UK	0	0	0	2010
Turkey	2	2	2	2010
China	4	3	3	2011
India	2	2	2	2011
Iran	4	4	4	2011
Egypt	0	0	0	2012
Tunisia	0	0	0	2012
Yemen	3	4	3	2012

There are some awareness to fence some Internet services by Iraqi- Federal Ministry of Transportation and Communications (IMTC), which are Viber, Skype Whatsapp and Tango. Whereas, according to [21], the rhetorician of Kurdistan Ministry of Transportation and Communications (KMTC), these mentioned services will not be stopped in Kurdistan region and will continue. Mr. Omed M. Salih who is the KMTC spokesman also clarified that there no information has received by KMTC, about the limitation and/or to freeze Viber, Skype, Whatsapp and Tango services in Kurdistan. He also stated that if the IMTC decide to stop or limit the Internet services, the KMTC will not apply the decision and they would not follow IMTC adjudication. This is due to the Internet companies that have obtained the business license from the KMTC not from the IMTC. Hence, they are in the KMTC observation rather than in the IMTC.

#### Legal and Regulatory Framework

The Iraqi foundation protects freedom of expression as long as the expression does not violate public order and ethics. On July 2009, the Iraqi government announced plans to commence restricting 'violent and sexually' content, both online and off. The planned improves contain prohibition websites which include contents relating "pornography, terrorism, drugs, gambling and negative remarks about Islam".

These restrictions pursue on April 2009 study that has been established by the SCIS (Small Computer System Interface) (which is a group of standards for physically connecting and transferring data between peripheral devices and computers) focused on blocking immoral sites' contents and to inhibit abuse of the Internet. Moreover, the SCIS established another committee that was given the task of regulating and licensing private Internet Cafés and enforcing restrictions to provide or create a healthy environment for the Internet users.

According to Iraq's Ministry of Communications on 2009, the Iraqi government has made a contract with a French company to apply security system for the Iraq's Internet services. Therefore, by using this security system the government will be able to monitor the Internet and to block access to a specific online content that involves the information related to public morals and national security data.

#### Discussion and Finding

In this paper, a survey was used to analyze and discuss the current characteristics of the Internet services in KRI. The survey has been sent to one thousand Internet user, but the responses to the survey was 263 responders. According to the survey, there are lots of companies which provide the Internet, however, some of them have contracted with users to provide the Internet, namely, of the respondents, 34% have been using Goran Net, 17% have been using Max Net, 17% have been using Rebar Quick, 6% have been using Fast Line, 4% have been using Brosk Net, 4% have been using Fast Link and 2% have been using Cell Net. Furthermore, 67% were dealing with the LISP for more than one year. As we mentioned above, several companies provide a fake capacity of the Internet. Therefore, 67% of the respondents indicated that they do not receive the declared download speed which provided by the companies. The result of the survey presents that 77% of the Internet users in the KRI were not satisfied with the Internet services due to the fact that the services provided by the companies were so few and not enough to accomplish tasks on the Internet. Also, 71% of the respondents indicated that Internet filtering should be applied by the government because of child abuse and pornography. Due to this corruption Reber Quick had faced a problem a year ago, the result was many users left this LISP as indicated by our survey, i.e., Reber Quick users decreased from 39% to 16%.

This paper also had a face to face interview, so according to this data gathering technique lots of games,

for instance, Assassin's Creed TMGT Racing, The Real Car, Modern Combat, Zero Hour, The Dark Knight Rises, Fast Racing 3D, GT Racing, The Real Car Exp, N.O.V.A.3-Near Orbit and The Amazing Spider-Man are not allowed to be played in Iraq due to the Iraqi's IP address. Therefore, many gamers in Kurdistan use different software, namely, SecurityKISSsetup\_2 and HSS-3-19- -hiss-596-conduits to change their IPs since these games do not work by using the Iraqi's IP address. Hence, they attempt to find the way to work on them. Moreover, there are lots of online applications that can be used to perform tasks on the Internet; however, they cannot be used in Iraq, such as Paltalk. The application of Paltalk is an instant messenger which has significantly improved because it started on more than a decade ago, due to competition. This application offers several features, such as video and voice communication for free online, and also it provides a chatting room. The Paltalk application had worked in Kurdistan; however, Internet users in Kurdistan can download it while they cannot visit chat rooms at the moment. This is because Paltalk does not work by Iraqi's IP address. As a result, they attempt to modify their IP addresses till they will be able to access chatting rooms

## Conclusions

Nowadays, we cannot live without the Internet, our study shows that KRI has not good Internet governance, as well as KRI has not specific domain name. According to our questionnaire that we prepared to obtain information on the Internet services in the KRI, we want to illustrate the following points:

1. All KISP obtain the dedicate Internet; however, they mostly provide shared Internet service. Furthermore, some KISP provide a fake Internet capacity. Consequently, KRI users suffer from low service quality and interruption.
2. Our survey shows that 61% users suffer from the Internet services interruption and 66% indicated that they do not received the Internet speed promised by KISP. Most KISP purchase a service but they do not provide such services. For example, they promise to supply 2 Mb/s as Internet downloading speed, but they rarely provide Internet with this speed. The reason behind the phenomena is, they provide share service, and therefore at pick load the services are declined. Some of these companies utilizing from different pick load times between cities. Switching more bandwidth from city to another does the utilization.
3. Lack of monitoring by local authority. This lack refers to missing required expert, required regulations, and corruption. Therefore, KRI users did not repay in cases of services delay, slowness, and interruption
4. Preserved nature of KRI society and non-Internet filtering cause limitation uses of Internet. Our survey shows 71% of users prefer positive filtering to protect their families from negative affects of using Internet.

5. Because of the competition between companies and companies' tax, we could not obtain the correct information of Internet users.

Local KRI government need to take more care and solve the above issues. Furthermore, KRI government need to apply filters in a transparent way that prevent bad effects of using the Internet on Kurdish cultures and religion and agreed with human right. One of the practical ways to implement that is offer different level filters and give users the right to select and personalize level of filtering.

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