

## Economic View of Internet Freedom Issue

Rasim Alguliev

Department of information society problems  
Institute of Information Technology of ANAS  
Baku, Azerbaijan  
rasim@science.az

Farhad Yusifov

Department of information society problems  
Institute of Information Technology of ANAS  
Baku, Azerbaijan  
farhadysifov@gmail.com

**Abstract**—In the present research, we examine the relationship between the Internet freedom and various social, political and especially economic factors, as they affect the Internet growth. The results show a strong relationship between a country's GDP and Internet penetration. In general, the hypothesis which predicts that the higher a country's GDP per capita, the more likely that it has Internet access and freedom, is supported.

**Keywords**—Internet freedom; information environment; GDP; information security.

### I. INTRODUCTION

Considering international experience, while researching philosophy of freedom, it is clear that Gross Domestic Product (GDP) per capita is much higher in countries with greater economic freedom [1][2][3]. More precisely, people have more economical freedom in the countries with high GDP. Per capita GDP is the value of all final goods and service produced within a country for domestic use and reserve, and it is considered as one of the main indicators of living standards of the country's population. Generally, Information and Communications Technology (ICT) policy of the country determines the basis of information freedom of the country. Information asymmetry problem existing on the Internet is viewed as one of the issues with a complex solution and deficiencies in this field are currently becoming more intensified.

In the research we examined, the relationship between the Internet development and various social, political and especially economic factors, as they affect the Internet growth. The results show that the Internet penetration is related to a country's wealth, per capita GDP, telecommunication infrastructure, urbanization and stability of the government.

Some views on information freedom are investigated and factors affecting Internet Freedom are analyzed and given correlation between volume of per capita GDP and number of Internet users.

### II. SOME VIEWS ON INFORMATION FREEDOM

ICT and government policy of the country determine the quantity (and quality) of Information freedom. Although people's information freedom is declared as proclamatory, objective and subjective solution methods for its solution must be found in each country. This is directly connected to economic condition, regional position, political views, etc.,

of the country. For example, based on the statistical indicators, Internet access speed at 1Mb/sec per capita is considered as minimum for providing people's information freedom in Finland [4][5].

Information asymmetry problem existing on the Internet worldwide is viewed as one of the issues with a complex solution for provision of freedoms. High price factor of Internet can limit the people's ability to obtain information. In other words, people with Internet access can obtain more superior knowledge. Logically, it can cause formation of notions such as information monopoly, information dictatorship, information imperialism, etc.

Provision of freedoms, unwritten rules in existing environment, chaos, anarchy etc. can logically lead to formation of environment for prosperity of all kinds of crime. One of the most important issues for this stage is formation and development of information society.

Information environment – is such an environment, where information is created, stored, processed and transmitted. All forms of information exchange existing in the society are executed, and provide for existence and operation of the society as a single social organism. In general, information environment can be demonstrated as three integrants:

- Languages reflecting all forms of information on information relations occurring in the country;
- Content-volume, meaning and value (importance) of information;
- Information-communication infrastructure forming the material basis of information exchange.

It must be noted that, characteristics of contents and information-communication infrastructures define the information space of the country in total, as a whole.

The notion of information environment can concern the society as a whole, as well as any of its activity spheres. It can be noted that, information environment of science or its different fields (economy, culture and other information environments) can be discussed as information environment of the world, country, region and city.

Development of information environment in different countries happens irregularly within time and space, and depends of development level of the country. In modern society, information environment mainly has a network structure. The main connection form among points of information environments is Internet and it provides the technical means of information connection of one subject with another. From this standpoint, the Internet freedom

problem is encountered as a component of freedoms provision and lately, existing problem has become more intensified. Development of legal basis of Internet is demonstrated as one of the relevant issues. Naturally, processes occurring in Internet environment cannot be regulated with existing laws. Freedoms of the users can be discussed based on the normative-legal basis to be created.

### III. FACTORS AFFECTING INTERNET FREEDOM

Generally, there are objective and subjective factors affecting Internet freedom [6][7][8][9]. Absence of information resources in accordance with national standards, non-conduction of audit, absence of feedback mechanisms, and disinterestedness of the government in development of Internet can be cited as examples. Installation of different filters, analyzers within the borders of the country, total control of relations of users with Internet, limitation of access to web-sites and social networks are among the factors affecting Internet freedom.

Another important issue is the evident exaggeration of energy security problem of Internet lately. Thus, energy security problem, which is considered as one of main components of information security of the society, must be kept in focus constantly. As energy security is not a domestic issue of the government, it must be considered that, shut-down of a server located in a certain country limits the access possibility to existing information resources from other countries.

Artificial increase of Internet use prices, non-satisfactory services provided to the users by the providers, absence of formation of normal competition environment, etc., can be cited among factors affecting Internet freedom in developing countries [8][9][10][11].

In general, requirement of maximum Internet freedom in countries with poorly developing economy does not reflect existing reality. From this standpoint, a system of indicators characterizing the economic potential of the country must be developed considering economical potential of the country. For example, countries can be classified and divided in classes by regions, based on per capita Internet speed in the country. Surely, this evaluation is connected to a certain period. Because with passage of time, economic conditions of the countries change, to be more precise, Internet capabilities change. Thus, geographical landscape of Internet freedom in world countries, and regions can be obtained.

### IV. CORRELATION BETWEEN VOLUME OF PER CAPITA GDP AND NUMBER OF INTERNET USERS

Slow development of information technologies, and limited or no Internet access opportunities in developing countries are justified by a number of reasons:

- Low level of income limits the Internet access and in general, use of capabilities of modern technologies by population and companies.
- Absence of the desired level of infrastructure in cities and territories, as well as low number (density) of potential consumers leads to further increasing expenses on development of infrastructure;

- Poor development of infrastructure and very limited access opportunities to them results in high prices of Internet access;
- Low level of literacy of population, non-sufficient level of computer knowledge;
- Unformed or non-existent normative-legal base.

According to the research, economic indicators of the country and difference among them are regarded as one of the most evident factors [10][11][12][13]. Volume of per capita GDP determines the capabilities of citizens and companies as potential consumers on the Internet market. Share of Internet users among population increases as these indicators increase. Besides, there are relevantly more Internet users in countries with high or very high GDP per capita. We can distinctly see this tendency as we look at the correlation (in Fig.1) between GDP volume per capita and ratio of Internet users ( $I_{users}$ ) and the base population ( $P$ ) in Azerbaijan in 2002-2010 years [14].

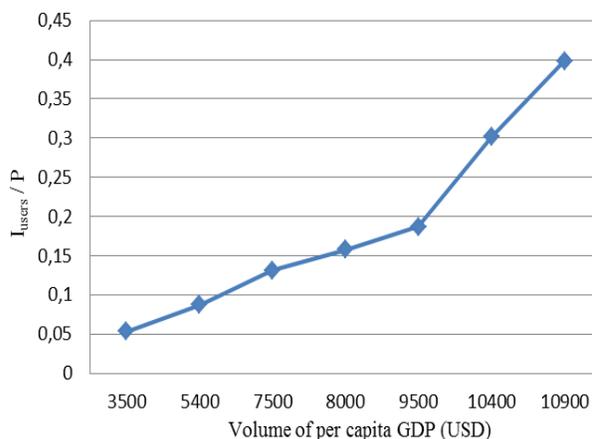


Figure 1. Correlation between GDP volume per capita and ratio of Internet users ( $I_{users}$ ) and the base population ( $P$ ) in The Republic of Azerbaijan in 2002-2010 years.

The results show a strong relationship between a country's GDP and Internet penetration. Developed countries tend to boast a higher Internet penetration rate than poor countries. In other words, countries with low GDP per capita are all on the low end of the Internet penetration rate. In generally, hypothesis which predicts that the higher a country's GDP per capita, the more likely that it has Internet access, is supported. In this case, to a certain extent, Internet development is more likely to be affected by economic factors rather than social and political factors.

In other words, GDP per capita is considered as one of the main indicators of living standards of country's population. If the volume of GDP per capita is high, then population of that country has more economic freedom. Provision of economic freedom means capability to access Internet, and in this case, we can talk about provision of Internet freedom. It must be noted that, the factors affecting Internet development process are not of linear character. Effect of economic factors is formed at a certain

chronological stage or depending on a sequence of different effects.

## V. CONCLUSION

Volume of per capita GDP is accepted as one of the main indicators of living standards of a country's population. Volume of per capita GDP determines the potential consumer capabilities of citizens on Internet market. Increase of these indicators leads to increase of Internet users' share among population. This suggests that provision of Internet freedom depends on economical factors and conduction of researches in this field is necessary.

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