Effect of Internet on Arab Societies

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***Abstract* - The Internet affects the behavior of the young generations; it causes a mixture of virtual publicity, amentia and idiopathy. Internet addicts suffer some radiation defects due to their long sessions, this may result in blood ionization, leukemia or eye cataract. The paper presents a statistical study on health engineering concerning the effects of Internet on the Arab Society. It presents also some guidelines for a better Internet use.**

Keywords – IPS; ISP; HDI.

I. INTRODUCTION

Internet handles data among hosts in different sites. Information transfer via Internet results in technology evolution and economy developments. Internet handles e-commerce, educational sites, e-mail, chat, data transfer, etc.,; it can handle twitters, virus and spam. The use of Internet doubles annually. Many statistics were developed to evaluate the usability of Internet. The next sections explore statistical studies about Internet users, the harms and benefits of Internet, wireless Internet and their harms, and explore a regional study for Internet users in Egypt.

II. STATISTICAL STUDIES ABOUT INTERNET USERS

In USA, by 2005 [1], it was declared that the yearly access to Internet was about 10.8 millions PC's, 46.1 millions of mobile systems, and 1.7 millions of PDA's. This concludes that the mobile systems are the dominant agents, because ease of use. In USA, by 2005, about 55.3% have Internet access [1]. Statistical study for Internet users is shown in Figure 1.

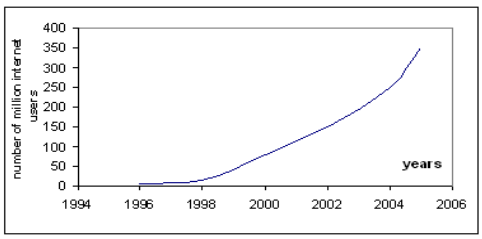

Figure 1. Growth in Internet over the world [1]

The studies by 2006 [2] indicated that 35.8% of the world population have computers, and only 15.7% have Internet access. This percent increases in the Asia by a rate higher than in Europe. Conrad [2], expected Internet users by 2010 to be 60%. The world's economic crises reduced this ratio [3]. The percentage of Internet access depends on the user's age; as shown in fig2. The dominant user ages are between 18 and 30; these form 52% of the users. They visit adult, news, and job sites. The percentage of using Internet decreases for ages higher than 50 years. Internet performance is improved annually by about 40% [3]. Performance of Internet is estimated via set of metrics like: admissibility, sustainability, trip delays, and loss ratio. These metrics affect the users' temper and Internet returns.

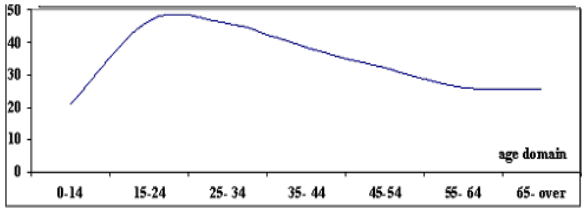

Figure 2. Statistical study for using Internet among ages in USA [1]

III. INTERNET USAGE

Middle east, Asia, and Africa still use Internet with rates about 6%, but with a high growth rate. The highest Internet use is accomplished in Japan and North America, as shown in Figure 3.

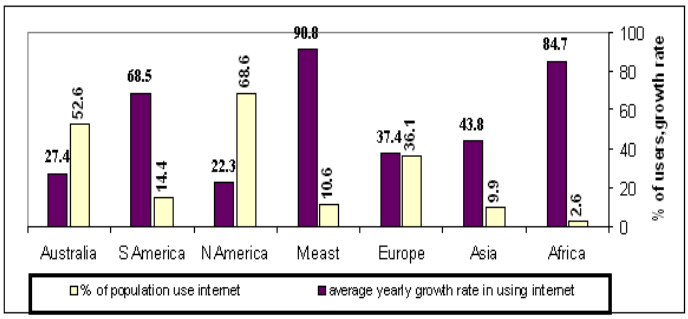

Figure 3.a- Average use for Internet and average growth rate [2]

Most users use Internet via home ADSL, Internet centers and telephone lines as shown in Fig 4[4]. In France, by 2005, a study shows that more than 55% of people use Internet, 26% of them use modem dialup, 53% use ADSL, other 21% use wireless cells.

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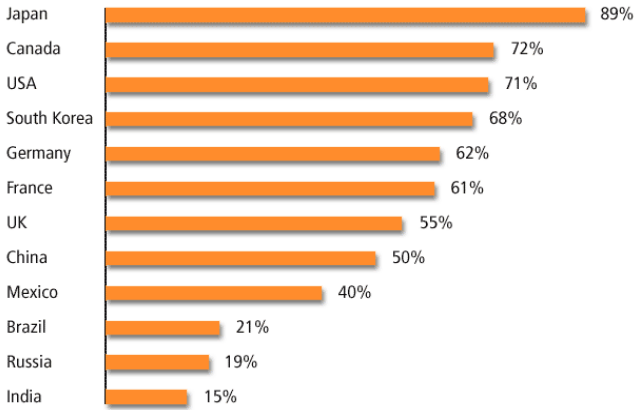


Figure 3b. Percentage of Internet use in a set of monitored countries [4]

The rate of using wireless net increases while the dialup rates reduce. In Arab countries, Arab Emerit has the highest ratio for Internet users (about 30%). Saudi Arabia users are about 10% , while in Egypt users are about 12% of population, as shown in Figure 4.

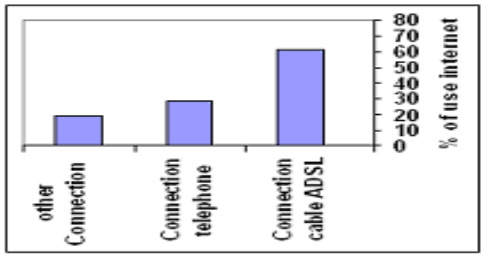


Figure 4a. Rates of using Internet media [2]

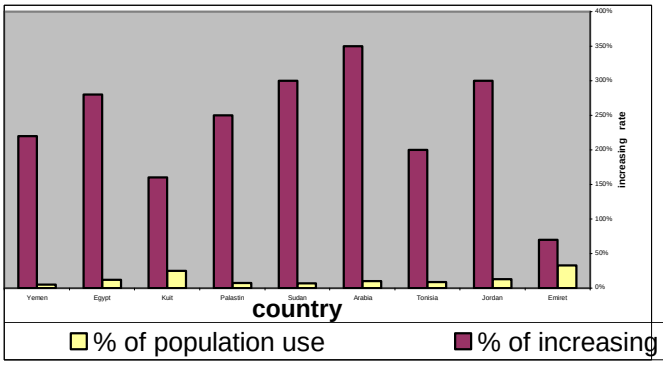


Fig4b. Internet in Arab countries [21]

IV. INTERNET ECONOMY

ISPs develop advertisements, adult videos, news, free software, free email, messengers, IDM accelerators, on line games, search engines, etc., to lure users to spend the longest time on Internet. The average money spend for Internet per month over the world exceeds $5 billions [6]. The peak periods of using Internet are about 10AM, and 9PM. This time varies due to the geographic timing among the countries. Therefore, the Internet load is almost regular. The access to the Internet depends on levels of life, and culture as shown in Figure 5. It was noticed that people with high income, use internet with more ratios. The accessed sites varies depending on the ages and cultures of users. It was noticed in US and Europe [6] that 87% of the families that have colleagues, have access to Internet, while less than 70% of the families that have no colleagues, access the Internet. The e-commerce are the most objectives, while the educational sites have low access rates and form about2% of the accessed sites [5]. Figure 5, indicates relations between HDI (Human Development Index), and the use of Internet.

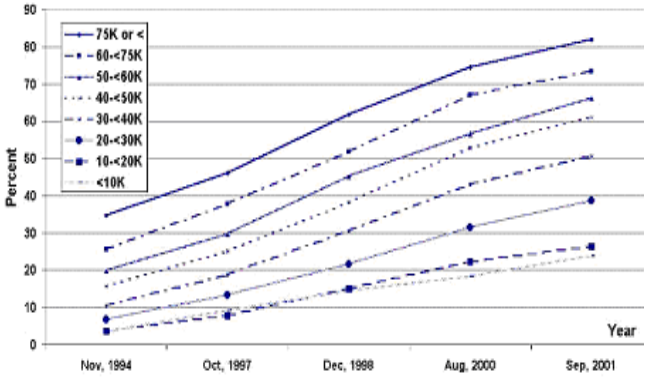


Figure 5a. Percentage of Internet users regarding Iicome in US, age> 18 years [6]

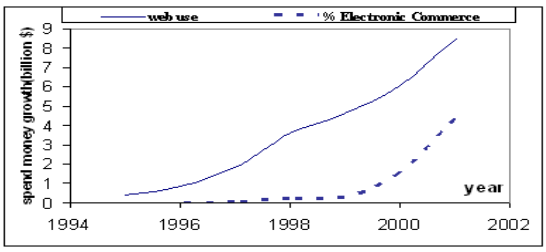


Figure 5b. Average money/year for Internet and e-Commerce, in US [6]

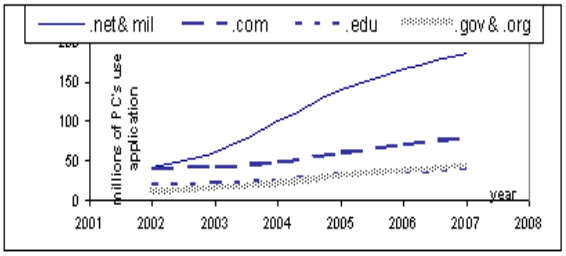


Figure 5c. Internet accessed sites, 2005 [4]

TABLE I. THE STATISTICAL TOPICS OF INTERNET APPLICATIONS IN THE WORLD [3][7]

Adult sites, Spams, e-commerce, email, interactive games, declarations, etc.	28%
File transfers, scientific downloads and uploads, e-learning, training programs, software activities, etc.	21%
Youtube videos, clips, audios	14%
Video conferencing, chats, forum	18%
Job seeking, news, web searches, etc.	19%

Spammers and Intruders destroy information and emails. Spammers catch the emails of victims by offering free services, forum, online games, chat rooms, messengers, videos, pornographic sites, anonymous connections, fake websites, lottery scams, etc. USA, China, Korea, and Russia deliver more than 93% of the world's spasm [8]. Regarding the languages, the percentage of Chinese emerged sites is 14%, Arabic sites is 12.8%, while the English sites are emerged by a rate more than 70% [8] as shown in Figure 6. Anti spam programs can detect only less than 80% of the spam. Spam filters may cause negative detections (reject the needed messages) or positives detections (reject un-needed messages), according to the used keywords. Curious and Intruders form more than 40% of spammers. Spam data consume bandwidth of Internet [8]. This results in less available bandwidth and more paid fees for the same data. A statistical e-mail spam was declared by ITU [7] as shown in fig6. The plot indicates that the advertisements trade form about 50%, while adult dates, pharmacy and chat form more than 30%.

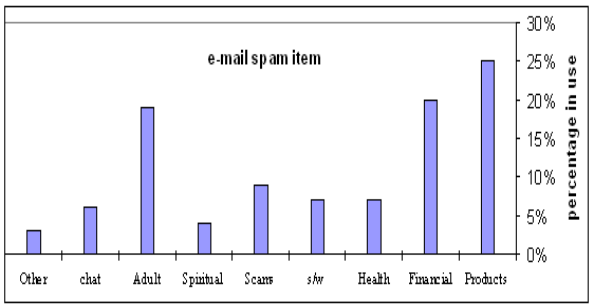


Figure 6-a. Percentage of Internet spam [7]

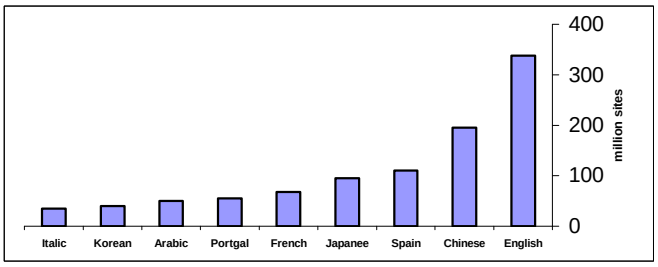


Figure 6b. Percentage of Internet sites versus language [21]

In 2006, ITU recorded an average spam with $55 billion. In 2007, this rate was increased to more than $100 billion [8]. In 2008, the estimated cost of Internet spam in US was about $17billions, and formed more than 92% of the received e-mail [9]. Filtering spam improves the bandwidth, admissibility, sustainability and serviceability of the Internet. About 80% of spammers in America and Europe are malicious. The other 20% entities use Internet mails for marketing in low cost. E-mail spam grew exponentially, it comprises more than 85% of the e-mail among the world, which results that about 85% of Internet utility waste for annoyments [10]. This decreases the returnee for the Internet vendors. Table 2 indicates the countries that spread spam around the world.

TABLE II. COUNTRIES THAT SPREAD SPAM [9]

USA	**28.4%**	**South Korea**	**5.2%;**
China	**4.9%;**	**Russia**	**4.4%;**
Turkey	**3.%;**	**Germany:**	**3.4%;**
United Kingdom	**2.4%;**	**Poland**	**2.7%;**
Brazil:	**3.7%;**	**Romania:**	**2.3%;**
Mexico:	**1.9%;**	**France**	**3.6%**
Middle east	**1.4%**	**Other countries**	**32.5 %**

EUIMC estimated the cost of "junk email" to be €10 billion [10] in 2005, while the spam cost in USA exceeded $13billion in 2007 [8]. In 2008[9], about $7billions were recorded for adult pharmaceutical spam**.** Anti-spam programs were developed to avoid attacks, protect and filter the junk e-mail, block spam, and terminate spammers' accounts. Spam Avoidance Routines **(**SAR) are saved in firewalls and routers to block the spam spreading. SAR catch the duplicated messages and delete them. Many SAR use statistical filters like: Mozilla thunderbird, mailwasher, and spam assassination software. SAR list spammers, deny their access, use learning techniques to analyze the content of e-mails, and filter spams [10].

V. INTERNET HARMS FOR HUMAN HEALTH

Taylor [11] concluded a relation between computer exposure and early cataract. In 2001 [12], a study investigated a form of eye cancer called "melanoma" caused for computer addicts. The research sounds that there is a threefold increase in eye cancers among people who regularly addict the use of Internet. Long exposure periods, cause brain headache and idiocy. Long periods of hearing clips, using headphone may deteriorate eardrum. The radiation penetrates the organic cells of chronics, and affects the regularity of endocrine and pineal gland[15]. Cataract,

 ISBN: 978-1-61208-116-8

results in loss of lens' transparency, and may lead to blindness. Radiation suppresses the body's immune system [13,14]. HCI has limited the exposure power to be less than 10 mw. The electromagnet radiations affect the skin and may lead to melanoma. Dermatologists in American Cancer Society (**ACS**) declared that 20% of USA Internet chronics has melanoma that may lead to skin cancer [15]. The wireless Internet has the main effective ratio. ITU [3] had stated that the level of service sustainability affect the user temper and may led him nervous or gloomy.

Computers, mobiles and wireless LANs, radiate harmonics that cause blood ionizing. The harmonics cause cell heating and results in disturbing cell functions. Although the power of the harmonics is low, but the long sessions increase the doses that damage the cells[16]. Radiations interact and generate disturbed genes that perform malfunctions. When the structure of the cells is altered, this may result in cancers. An acute radiation dose is defined to be 10 radon, during a period of 3 hours or more. This causes eye inflammation. If the dose is greater than 100 radon, This may damage the lymphatic tissues and may cause convulsions [13]. The radiations harms depend on the power of the electromagnet radiations that is absorbed by the human body. When the power of a channel becomes weak, a hand over is assigned to another channel with a higher power. The high power signals are more harmful. Electromagnet radiations, thermal radiations, and ionizing radiations, cause unbalanced cellular performance which may lead to cancer. Bluetooth radiations, and radiations produced at private WLANs, GSM, may lead also to cancer [15]. The mobile Internet use 10 watts for upload and MSC use 100 watts for download. This power is exponentially decreases with the distance from MSC. Electromagnet radiations penetrate the human tissues to a depth depends on their frequency, and power. The high frequencies and high power penetrate more distances and result in more harms[16]. These radiations are absorbed causing heat, which disturbs the functions of human cells, and may cause fever or cancer. Edwards[17] recorded a relationship between Internet addicts and the cataracts. The study showed that the prolonged exposure to radiation, may lead to cell damages and these damages accumulate and may be unhealed. Cataracts result in loss the transparency of lens. If cataracts are untreated, this may lead to blindness. Radiation explodes the eyes' veins, causes high pressure in the eyes, and deteriorates the vision. Wireless radiations also reduce the efficiency of the immune system. Posluns [19] reported that a cell phone call lasting more than two minutes affects the activity of a child's brain for up to an hour afterwards. This brain electricity leads to a lack of concentration, and aggressive behaviors [19]. Neurologists reported a fourfold increase in the risk of Alzheimer's disease for persons who have jobs with EMF exposure [15].

About 65% of the sites are covered with wired links, about 30% are covered with wireless and satellite links, the other regions are unmonitored [18]. These areas are rare populations on south America, middle Africa, Arctic and Azerbaijan regions. Cables are more radiation immune. WHO and ITU recommended replacing the satellite links with fiber links [16]. The satellite links are used at the countries that suffer from poor telecommunication infrastructures [18]. Fig 7, indicates that the number of monitored sites doubles every three years.

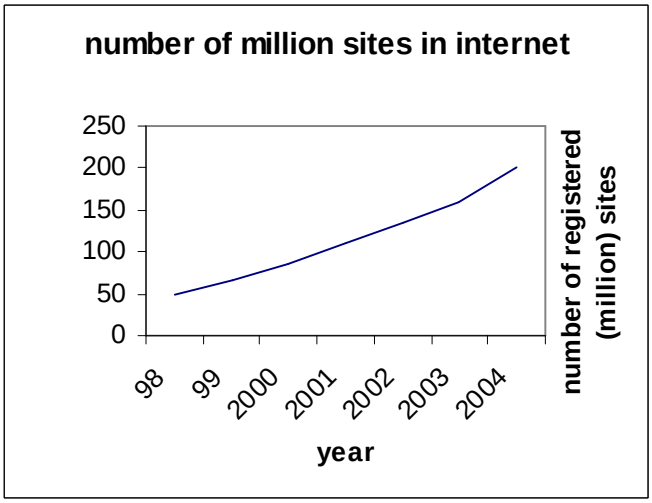


Figure 7. The growth of Internet registered sites

Interrupted or out of service sessions, degrade QoS, and lead user annoyments. The long delays reduce user satisfaction. This leads to anxiety, violence, or numbness. Internet' vendors developed anti-spam to filter traffic and omit threats. Table 4 indicates the percentages of Internet activities.

TABLE III. ACTIVITIES OF INTERNET [3,18]

Action	%	action	%
Business & video	11.9	search	11.4
E- learning	4.5	e-commerce, GIS	14.0
Content explore	8.3	Social deal	14.4
Mobile	2.8	Wild deal	2.0
Chat video	6.3	Photo sharing	1.4
messaging	4.9	Consulting services, forums	10.4
Hosted services	6.1	Software Down loads	1.6

Figure 8 indicates the percentage of the e-commerce ratios in Arab countries.

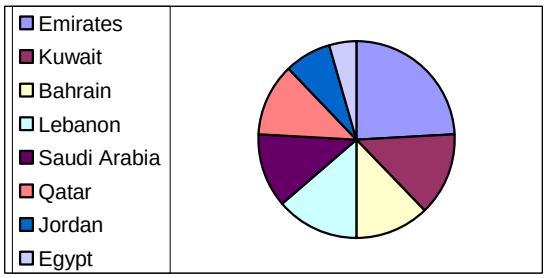
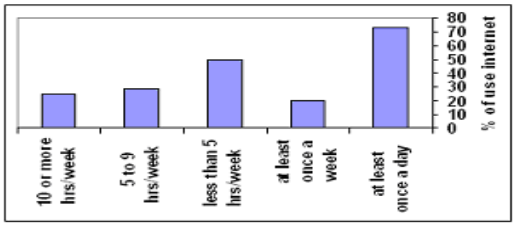


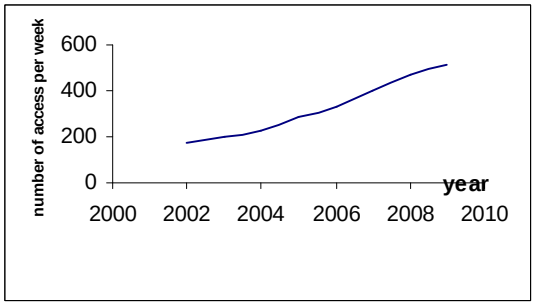
Figure 8. The e-Commerce ratios in Arab Countries [21]

VI. STATISTICAL EXPERIMENTS IN EGYPTIAN UNIVERSITIES

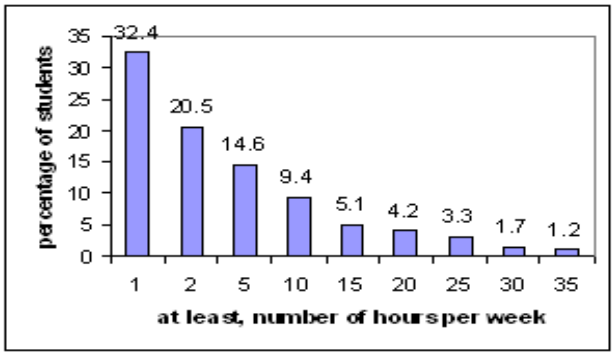
ITU [3] used the average growth rate for using Internet as a HDI. A study was done for Electrical Engineering students in Tanta, Zaqaziq, and Kafrel-sheikh universities. The study assured that about 60% of the students, visit Internet sites at least two hours per week, about 7.6% use internet for less than an hour per week, as shown in Figure 9. The average time of weekly Internet use in these campuses, is doubled every couple of years. The rates of Internet access are reduced at vacations by a factor between 10-40%. Users in age between 18-54 years form more than 92% of internet users. Internet addicts may daily access Internet for more than ten hours. About 83% of the accessed sites are by users whom age less than 30years. These users concern on chat, clips, news, forums, and movies. This concludes that the percentage of guided Internet use is less than 20% of the total use, more than 80% of internet economy waste for twitters and more than 80% of internet outlay has a negative returnee for time and money.



a. Rate of access Internet, 2007



b- Number of students access Internet / week



c– Percentage of Internet use

Figure 9. Sample of Electric Engineering dep.'s at Tanta, Zaqaziq and Kafrel-Sheikh Universities, Sample size = 600 Students

Table 5, was collected in 20 Cyber-nets in Tanta, Zaqaziq and Kafrel- sheikh cities (Egypt) during summer 2009, it indicates the most benefits and problems arises by internet usage

A study was done in 20 Cybers in Tanta, Zaqaziq and Kafrel- sheikh cities (Egypt) during 2009, the sample size was 200 healthy persons, 100 of them are Internet addicts, with ages between 40 and 60years. This study indicated during the year, that addicts suffer from convulsion, 20% more than these that are not addicts. Their eyes suffer iris inflammation, and cataracts,15% more than these that are not addicts. Radiation for long sessions causes blood ionization, and high pressure, 15% of the Internet addicts suffer from high brain electricity, heart attack, and leukemia more than these that are not addicts. About 14% suffer hype, obesity, tingling, backaches, anal fissure, piles and muscles weakness. The family divorce rate was increased with 12% due to the virtual relations among the Internet. About 6% has paranoia, schizophrenia due to chat sessions.

VII. CONCLUSION AND REMARKS

The Internet consumes our time, money and health. The paper discussed the harms due to the ill-guided use of Internet, concerning the economy and health. The paper presented a statistical study for the Egyptian society concerning the problems of Internet addicts, and effect of wireless networking. The paper concludes the next guides for Internet users to reduce the harms. It is preferred to use LCD screens with desktop systems, connected to fiber land cables to reduce the effect of wireless networks. User must reduce the use of Laptop to avoid the electromagnet radiations. The use of Internet, must be not more than 2 hours, then take a break and resume the session later. This helps the body to discharge the accumulated absorbed

 ISBN: 978-1-61208-116-8

radiations. People using glasses must use frameless eyeglass, with no wires, because the wires act as antennas that focus the radiation directly onto brain and eyes [11]. Internet addicts must take anti-oxidants and zinc doses, to reduce the effect of radiations on blood ionization. Zinc protects the eye from oxidative damage [13]. Long periods of exposure cause headaches, dizziness, lack in concentration, eye irritation, depression, anxiety, fatigue, muscle spasms, and numbness. Radiations disturb the pineal gland that regulates sleep, blood pressure, cholesterol levels, and immune system [17]. Therefore, the guided use of Internet, will save at least 80% of our time against Internet, save effort, health, and result in a perfect returnee.

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 ISBN: 978-1-61208-116-8

TABLE IV. THE MAIN TOPCIS OF INTERNET REGARDING THE AGES AND PERCENTAGE OF USERS IN EGYPT SOCIETY

age	percentage	popular interest w.r.t. age	problems	benefits
<16	24%	games, chats, clips, movies,	violence, idiopathy, dumpiness, violence, crimes, curiosity,	build intelligence curiosity, prune
16<age<30	39%	job seeking news, forum, adult sites, email,	crimes, abnormality,	emotions, grow relations,
30<age<40	14%	sales, exchange, conferences, software applications, e-learning,	divorce, abnormality, mal-parenthood,	software training, applied software, e-commerce, IT, news
40<age<50	10%		high brain electricity,	update, distance
50<age< 60	8%	advertisement, web search, electronic government, e-commerce, , commercial trades,	rheumatism, high pressure , heart attacks, hypertension, blood ionization, iris	learning,
age>60	5%	news, forum,	inflammation	entertainments

 ISBN: 978-1-61208-116-8