CHAPTER III

BASIC CONCEPTS OF INTERNET

In the modern age, we are witnessing amazing development in the computer and networks fields, particularly in the last decade. The word internet was not as popular as it is today; because internet users were limited to those who had the ability to communicate and exchange information via computer networks. Now a day's communication through computer has become part of our life and we can’t do without it. Fast development in the computer and networking has changed the life and its methods around the world, and we can see that clearly in the U.S.A. and European countries, every thing there is being done through the internet. For example shopping, making reservations at hotels and restaurant, booking airplanes, and train tickets through internet and also pursuing education as well as certain banking activities.

3.1.1 DEFINITION:

There are several definitions for internet, but the popular one is that “Internet is a huge network of computers, which links many different types of computers all over the world; it is a network of networks, which share a common mechanism for addressing (identifying) computers, and a common set of communication protocols for communications between two computers on the network.”

13 Internet is asset of computers talking over fiber optics, phone lines, satellite links and others links. It is a global

collection of high powered computers that are connected to each other with network cables, telephone lines, microwave dishes, and satellites.

The internet is the world's largest computer network. It is a global information infrastructure comprised of millions computers organized into hundreds of thousands of smaller, local networks.  

3.1.2 BRIEF HISTORY:

The government of the U.S.A. advertised the birth of internet on 2nd January 1969 and called it ARPANET system of the Advanced Research Project Agency of the U.S. Department of Defense. ARPANET was connected between the computers in the Defense ministry and War ministry. After that the network was divided in to two networks, ARPANET to serve the civil people in the field of Research and MILNET for military purpose.  

ARPANET and MILNET were connected together and called INTERNET or INFORMATION SUPER HIGHWAY. It is difficult to connect the two words Internet and History because the word Internet is a new phenomenon but the amazing speed of the development of internet network urges us to know about the elements that contribute to its development and its applications in various fields. Initially internet network comprised groups of people and organizations who had a common interest (mostly military) and who according to the programming language of computers and technical expertise those were specialized in the field of information science.  

But now with the various applications and services of internet the problem has been solved

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16 Shahean, Baha’a, Ibid, p.32.
and the internet network serves all the sections, in different fields and people with no need for personal computer experience.

3.1.3 THE OWNERSHIP OF INTERNET:

Internet has been developed by many companies. Each company, developed it according to its needs since 1969, and until now is still developing continuously. There are groups and committees which take the mission of supervision such as.\(^\text{17}\)

1. Network Information Centers

2. Internet Society

3. Internet Engineering Task Force

4. Internet Architecture Board

5. Federal Networking Council

Internet constitutes a peculiar social culture of co-operation, data exchange and offering the services and information with or without charge. “For example in the U.S.A. information is still under the ownership of individuals or groups who produce it without great importance to the method of storing and presentation. So the internet network doesn’t belong to any person or government.”\(^\text{18}\)


Who governs the internet?

The important thing is that, internet is governed by no one and it can’t be governed however the internet is tied into a complex web of governing bodies, rational legislatures and international professional societies. We can say that no one governs internet. There are several organizations that control the internet activity. They make an effective system and monitor its evaluation.

Among the governing bodies of the internet are:

- The internet architecture board (IAB), which helps define the overall structure of the internet.

- The internet corporation for assigned names and numbers (ICANN), which assigns IP addresses and the internet network information center (Inter NIC), which assigns main names.

- The Internet Engineering Steering Group (IESG), which oversees students setting with respect to the internet.

- The Internet Engineering Task Force (IETF), which forecasts the next step in the growth of the internet, keeping watch over its evolution and operation.

- The Internet Society (ISOC), which is a consortium of corporations, government agencies and nonprofit organization that monitor internet policies and practices.

- The World Wide Web consortium (W&CC), which sets HTML and other programming standards for the web.
While none of these organizations have actual control over the internet and how it functions, they can and do influence government agencies major network owner, ISPs, corporations and software developers with a goal of keeping the internet operating as efficiently as possible.\(^\text{19}\)

### 3.1.4 THE SIZE OF INTERNET:

Internet has developed greatly in many ways like: - investors, devices and the number of networking. This growth of the previous years made great changes on the internet and we can see these from the following statistics:-

- The average growth of people on internet is 10% per month.
- The growth of commercial sectors is 60% quarterly.
- The growth of World Wide Web is more than any other part on the internet.\(^\text{20}\)

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Table 3.1

World internet usage and population statistics.

<table>
<thead>
<tr>
<th>World regions</th>
<th>Population (2007 Est.)</th>
<th>Population % of world</th>
<th>Internet usage latest data</th>
<th>% population penetration</th>
<th>Usage % of world</th>
<th>Usage growth 2000-2007 in percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>933,448,292</td>
<td>14.2 %</td>
<td>33,334,800</td>
<td>3.6 %</td>
<td>3.0 %</td>
<td>638.4 %</td>
</tr>
<tr>
<td>Asia</td>
<td>3,712,527,624</td>
<td>56.5 %</td>
<td>398,709,065</td>
<td>10.7 %</td>
<td>35.8 %</td>
<td>248.8 %</td>
</tr>
<tr>
<td>Europe</td>
<td>809,624,686</td>
<td>12.3 %</td>
<td>314,792,225</td>
<td>38.9 %</td>
<td>28.3 %</td>
<td>199.5 %</td>
</tr>
<tr>
<td>Middle-East</td>
<td>193,452,727</td>
<td>2.9 %</td>
<td>19,424,700</td>
<td>10.0 %</td>
<td>1.7 %</td>
<td>491.4 %</td>
</tr>
<tr>
<td>North America</td>
<td>334,538,018</td>
<td>5.1 %</td>
<td>233,188,086</td>
<td>69.7 %</td>
<td>20.9 %</td>
<td>115.7 %</td>
</tr>
<tr>
<td>Latin America/Caribbean</td>
<td>556,606,627</td>
<td>8.5 %</td>
<td>96,386,009</td>
<td>17.3 %</td>
<td>8.7 %</td>
<td>433.4 %</td>
</tr>
<tr>
<td>Oceania/Australia</td>
<td>34,468,443</td>
<td>0.5 %</td>
<td>18,439,541</td>
<td>53.5 %</td>
<td>1.7 %</td>
<td>142.0 %</td>
</tr>
<tr>
<td>World Total</td>
<td>6,574,666,417</td>
<td>100.0 %</td>
<td>1,114,274,426</td>
<td>16.9 %</td>
<td>100.0 %</td>
<td>208.7 %</td>
</tr>
</tbody>
</table>

Source: www.internet world state.com

From the above table we can see that, the total population of the world was 6,574,666,417 in 2007 and the total internet usage in the world was 1,114,274,426. The population penetration being 16.9%. The usage growth in internet network 2000-2007 is 208.7%. From the above table we can see that the largest population in the world is in Asia i.e. 3,712,527,624, but the internet usage in Asia is 398,709,065 which constitutes
only 10.7 % of the total usage of internet of the world while the North America population is 334,538,018 which constitutes 5.1 % of the total population of the world but the internet usage in North America is 233,188,086 which constitutes about 69.7 % of total usage of internet in the world. Also we can see that Europe has a population of 193,452,727 about 12.3 % of total population of the world and has 314,792,225 users of internet which contribute 28.3% of the total users on the world. From the above table we can see that the highest growth of usage between 2000 – 2007 was in Middle East 491.4 % and the lowest percentage of the growth of usage was in North America 115.7 %.

Figure 3.1 Internet Users by World Region.
### Table 3.2

Internet users in the Middle East and the World

<table>
<thead>
<tr>
<th>Middle East regions</th>
<th>Population (2007 Est.)</th>
<th>Population % of world</th>
<th>Internet usage latest data</th>
<th>% population penetration</th>
<th>Usage % of world</th>
<th>Usage growth 2000-2007 in percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for the Middle East Region</td>
<td>193,452,727</td>
<td>2.9 %</td>
<td>19,424,700</td>
<td>10.0 %</td>
<td>1.7 %</td>
<td>491.4 %</td>
</tr>
<tr>
<td>Rest of the world</td>
<td>6,381,213,690</td>
<td>97.1 %</td>
<td>1,094,849,726</td>
<td>17.2 %</td>
<td>98.3 %</td>
<td>206.1 %</td>
</tr>
<tr>
<td>World Total</td>
<td>6,574,666,417</td>
<td>100.0 %</td>
<td>1,114,274,426</td>
<td>16.9 %</td>
<td>100.0 %</td>
<td>208.7 %</td>
</tr>
</tbody>
</table>

**Source:** www.internet world stats.com

**Figure 3.2** Middle East Internet Users.
From the above table we can see that the population in the Middle East in 2007 was 193,452,727 the average of about 2.9% of the total population of the world. The internet users in the Middle East in 2007 are 19,424,700 which contribute about 1.7% of the total users in the world. The growth of usage between "2000-2007" is 491.4 % while the growth in the other parts of world was 206.1 % between "2000-2007".

**Figure 3.3 World Internet Users.**

![Pie chart showing internet users by region](image)
Table 3.3

Middle East Internet usage and population.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahrain</td>
<td>738,874</td>
<td>40,000</td>
<td>155,000</td>
<td>21.0 %</td>
<td>0.8 %</td>
<td>287.5 %</td>
</tr>
<tr>
<td>Iran</td>
<td>70,431,905</td>
<td>250,000</td>
<td>7,500,000</td>
<td>10.6 %</td>
<td>38.6 %</td>
<td>2,900.0 %</td>
</tr>
<tr>
<td>Iraq</td>
<td>27,162,627</td>
<td>12,500</td>
<td>36,000</td>
<td>0.1 %</td>
<td>0.2 %</td>
<td>188.0 %</td>
</tr>
<tr>
<td>Israel</td>
<td>7,237,384</td>
<td>1,270,000</td>
<td>3,700,000</td>
<td>51.1 %</td>
<td>19.0 %</td>
<td>191.3 %</td>
</tr>
<tr>
<td>Jordan</td>
<td>5,375,307</td>
<td>127,300</td>
<td>629,500</td>
<td>11.7 %</td>
<td>3.2 %</td>
<td>394.5 %</td>
</tr>
<tr>
<td>Kuwait</td>
<td>2,730,603</td>
<td>150,000</td>
<td>700,000</td>
<td>25.6 %</td>
<td>3.6 %</td>
<td>366.7 %</td>
</tr>
<tr>
<td>Lebanon</td>
<td>4,556,561</td>
<td>300,000</td>
<td>700,000</td>
<td>15.4 %</td>
<td>3.6 %</td>
<td>133.3 %</td>
</tr>
<tr>
<td>Oman</td>
<td>2,452,234</td>
<td>90,000</td>
<td>285,000</td>
<td>11.6 %</td>
<td>1.5 %</td>
<td>216.7 %</td>
</tr>
<tr>
<td>Palestine (West Bk.)</td>
<td>3,070,228</td>
<td>35,000</td>
<td>243,000</td>
<td>7.9 %</td>
<td>1.3 %</td>
<td>594.3 %</td>
</tr>
<tr>
<td>Qatar</td>
<td>824,355</td>
<td>30,000</td>
<td>219,000</td>
<td>26.6 %</td>
<td>1.1 %</td>
<td>630.0 %</td>
</tr>
<tr>
<td>Saudia Arabia</td>
<td>24,069,943</td>
<td>200,000</td>
<td>2,540,000</td>
<td>10.6 %</td>
<td>13.1 %</td>
<td>1,170.0 %</td>
</tr>
<tr>
<td>Syria</td>
<td>19,514,386</td>
<td>30,000</td>
<td>1,100,000</td>
<td>5.6 %</td>
<td>5.7 %</td>
<td>3,566.7 %</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>3,981,978</td>
<td>735,000</td>
<td>1,397,200</td>
<td>35.1 %</td>
<td>7.2 %</td>
<td>90.1 %</td>
</tr>
<tr>
<td>Yemen</td>
<td>21,306,342</td>
<td>15,000</td>
<td>220,000</td>
<td>1.0 %</td>
<td>1.1 %</td>
<td>1,366.7 %</td>
</tr>
<tr>
<td>Total middle east</td>
<td>193,452,727</td>
<td>3,284,800</td>
<td>19,424,700</td>
<td>10.0 %</td>
<td>100.0 %</td>
<td>491.4 %</td>
</tr>
</tbody>
</table>

Source: www.internet world stats.com
From the above table we can see that Iran has the largest population of 70,431,905 among the countries shown in the table and the usage of internet in Iran in 2000 was 250,000 but the internet usage in 2007 was 7,500,000. Qatar has the lowest population of 824,355. Syria has the largest growth of usage between "2000-2007" about 3,566.7 % while United Arab Emirates has the lowest percentage of growth between "2000-2007" about 90.1 %.

In the U.S.A. about 85% from the people have personal computers in their homes connected to the internet from 2000 and they are doing their business through it. The question of the ability to connect to the internet network is not available now because millions of companies and people are actually appearing across the net 24 hours per day during the year and the usage of internet has become easy. Internet is a large network contents from communication of local computer and personal computer widespread around the world among the telephone line, satellites and other communications method. The root of internet is Arpanet that had been established by Advanced Research Projects Agency in the U.S.A. it was a network of researches and defense to give the scientist and researchers new methods to exchange and deliver the information about different projects. The first result of the initiative was developing new methods to orient the data in various paths by (packets). These later became (Transmission control protocol / Internet protocol – TCP / IP) which constitute the famous protocol of internet and allows interaction with different computers and networks.

The Advanced Research Project Agency extended after Arpanet, and had been used to connect the research center through Electronic E-mail, news group and file transfer that guided to the birth of internet. With the continuation of deep understanding about the aims of the set net and its ability, many factors allowed the internet services provider (ISP) to present and offer their internet services to other people who were not members in the institutes or research centers. These factors are changing government policies and developing the NSF net and privatization. All these changes have opened the door in the face of stronger stream to promote various usages across the internet. The civilization of internet is being established now and it is not considered as a traditional civilization like others civilizations because it happens continuously, quickly and we can’t stop it.

“Growth was higher in developing countries, so that their share of the world’s Internet users rose from 21% in 2000 to 34% in 2005”. 24

Table 3.4

Internet users by language.

<table>
<thead>
<tr>
<th>Top Ten Languages in the Internet</th>
<th>% of all Internet Users</th>
<th>Internet Users by Language</th>
<th>Internet Penetration by Language</th>
<th>Internet Growth for Language 2000 - 2007</th>
<th>2007 Estimate World Population for the Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>29.5 %</td>
<td>328,666,386</td>
<td>28.7 %</td>
<td>139.6 %</td>
<td>1,143,218,916</td>
</tr>
<tr>
<td>Chinese</td>
<td>14.3 %</td>
<td>159,001,513</td>
<td>11.8 %</td>
<td>392.2 %</td>
<td>1,351,737,925</td>
</tr>
<tr>
<td>Spanish</td>
<td>8.0 %</td>
<td>88,920,232</td>
<td>20.2 %</td>
<td>260.3 %</td>
<td>439,284,783</td>
</tr>
<tr>
<td>Japanese</td>
<td>7.7 %</td>
<td>86,300,000</td>
<td>67.1 %</td>
<td>83.3 %</td>
<td>128,646,345</td>
</tr>
<tr>
<td>German</td>
<td>5.3 %</td>
<td>58,711,687</td>
<td>61.1 %</td>
<td>113.2 %</td>
<td>96,025,053</td>
</tr>
<tr>
<td>French</td>
<td>5.0 %</td>
<td>55,521,294</td>
<td>14.3 %</td>
<td>355.2 %</td>
<td>387,820,873</td>
</tr>
<tr>
<td>Portuguese</td>
<td>3.6 %</td>
<td>40,216,760</td>
<td>17.2 %</td>
<td>430.8 %</td>
<td>234,099,347</td>
</tr>
<tr>
<td>Korean</td>
<td>3.1 %</td>
<td>34,120,000</td>
<td>45.6 %</td>
<td>79.2 %</td>
<td>74,811,368</td>
</tr>
<tr>
<td>Italian</td>
<td>2.8 %</td>
<td>30,763,940</td>
<td>51.7 %</td>
<td>133.1 %</td>
<td>59,546,696</td>
</tr>
<tr>
<td>Arabic</td>
<td>2.6 %</td>
<td>28,540,700</td>
<td>8.4 %</td>
<td>931.8 %</td>
<td>340,548,157</td>
</tr>
<tr>
<td><strong>Top Ten languages</strong></td>
<td><strong>81.7 %</strong></td>
<td><strong>910,762,512</strong></td>
<td><strong>21.4 %</strong></td>
<td><strong>181.4 %</strong></td>
<td><strong>4,255,739,462</strong></td>
</tr>
<tr>
<td><strong>Rest of World Languages</strong></td>
<td><strong>18.3 %</strong></td>
<td><strong>203,511,914</strong></td>
<td><strong>8.8 %</strong></td>
<td><strong>444.5 %</strong></td>
<td><strong>2,318,926,955</strong></td>
</tr>
<tr>
<td><strong>WORLD TOTAL</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>1,114,274,426</strong></td>
<td><strong>16.9 %</strong></td>
<td><strong>208.7 %</strong></td>
<td><strong>6,574,666,417</strong></td>
</tr>
</tbody>
</table>

**Source:** Internet World Stats. Com

From the table above we can see that, English language has the biggest share of internet user 29.5 %, while Arabic language has the lowest share of internet user 2.6%.
Figure 3.4 Internet Users by Languages.

Table 3.5

Measures of electronic government, education and commerce in developing and developed countries, 2004

<table>
<thead>
<tr>
<th>Country group</th>
<th>E-government index</th>
<th>E-education (% primary and secondary schools connected to internet)</th>
<th>E-commerce (secure internet servers pr 1 million people)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing</td>
<td>0.27</td>
<td>38</td>
<td>1.9</td>
</tr>
<tr>
<td>Developed</td>
<td>0.68</td>
<td>94</td>
<td>319</td>
</tr>
<tr>
<td>Ratio of developed % developing</td>
<td>Non disponible</td>
<td>2.5</td>
<td>165</td>
</tr>
</tbody>
</table>
3.1.5 USES OF THE INTERNET:

There are many kinds of uses of internet in commercial or non-commercial field. Some of the important current strategic uses of the internet are listed below:

- On-line communication

- Software sharing

- Exchange of views on topics of common interest

- Product promotion

- Feed back about products

- Customer support service

- On-line journals and magazines

- On-line shopping

- Worldwide Video Conferencing.\(^{25}\)

- Compared with face-to-face networking, it’s time-effective

- Inputs person directly in touch with important decision makers

- Reach to online universe and build a reputation.\(^{26}\)

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Lastly we have to mention that the word INTERNET came from the phrase "INTERNATIONAL ELECTRONIC NETWORK".  

3.1.6 THE NECESSARY PROGRAMMES TO USE INTERNET APPLICATION:

There are many programmes and applications that are necessary to use the internet application but they are different from one computer to another. These programs are:

1. Tcpman program.

This program is responsible for connecting personal computer on the Internet Network, connecting it by the server provider.

2. Outlook Express / Eudora program.

These programs are used with e-mail.

3. Internet explorer / Netscape communicator.

These programs are used to browse the web pages

4. Wsarchi program.

Is applied to search files on the internet

5. WS-F+P Program.

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Through this program we can copy to or from the computers which connect to the internet network.

Most of these programs can be arranged from service providers. With the development of the software industry there are many programs that help us to use the services of internet, and every day there are new programs being introduced.

3.1.7 Basic Services of Internet

There are basically three types of services provided by the internet network to the users. These services are explained below:

1. Usenet News: This service gives a chance to the groups to exchange their ideas, information, and views about subject of common interest. There are several groups in the internet which are called news groups. This service includes main services like, e-mail and news.

2. File transfer protocol FTP: This service helps internet users to exchange and move the files from one computer to others. These files may contain digital information – text document, image, artwork, movie, sound, and software.

3. The World Wide Web www: The World Wide Web is a developing technicality and it is the most popular and promising method of accessing the internet network. Its popularity has come from using the hypertext concept which allows us to see the picture, image, text and sound. 29

Each service has its own features and special address so that the computers using FTP system have a special address different from the computers using WEB.

3.1.8 Who are actually available on internet?

The wide meaning of internet includes people, groups, organizations, schools, universities, commercial services activities, formal orientations and free networks that use the protocols of TCP / IP and always remain connected with the network the whole day. There are various opinions about the meaning of (availability on internet). Does it mean communication with the net only? or ability to communicate with the system and internet services like FTP, Goper, Telnet, E-mail and World Wide Web? or does it mean producing and selling goods, services and information to others? The view of the researcher is that “this concept means two ideas coming together, having wide availability. Any one having a personal computer connected to the internet network is considered available on internet network, whether he is a producer, a consumer or supplier. It is necessary to mention that the English language is still the main language used on the internet and has the biggest share. Some web sites offer documents in other languages and are also supported by English. Several researches indicate that, the internet network will constitute new economies and plan the movement of international Electronic commerce through the next few years and the number of local subscribers will increase enabling the getting of information much easier for commercial organization and will develop the internet network at great speed”. 30 Internet network has imposed new concepts, and the commercial organizations must absorb them.

1. Employment has changed in size, quality and the relationship with their managers.

   - Decrease in the jobs that need physical efforts replacing them by computers.

   - Offering new jobs opportunities with good conditions to the person who has the ability to learn and get knowledge.

   - Increased interest in human resources investment.

2. Capital has lost a large part of its share. when it was considered to be the biggest factor in production in an organization. Human efforts have become the main controller.

3. Internet is the main element among other factors that have guided the work towards globalization and the reaction to it is not the same in different part of the world, developed and developing. The two worlds developed and developing are afraid from the internet network if it will be better to other world. The developing countries are afraid of the increasing the gap with the developed countries and the developed countries are afraid of decreasing the gap with developing countries.  

3.1.9 Demographical Characteristic of Internet users:

The researches indicate that, the youth and young people (less than 25) have the biggest share in using the services of internet network because more than 55% of internet

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network subscribers are the youth and cultured classes. Users between the ages of 25-50 comprise 30% of the internet network subscribers.  

Figure 3.5 UseNet group.

3.2 THE MECHANISM OF INTERNET AND ITS SERVICES:

It is very important for us to know the technical mechanism of the internet before introducing its services in marketing. To connect to the internet network we need some basic things:

32 http://www.sbanet.uca.edu/
3.2.1 Personal Computer (PC) :

Personal Computer must have technical specifications proportionate with the minimum specification of internet network. Personal computer should be connected to Internet network so that the selling of personal computer (PC) increases day by day and, as a result, its prices will decrease and the internet will spread day by day. In 1996 the government of U.S.A. advertised its unlimited support for the internet industry to facilitate the use of its services and to become as easy to use as the TV and Radio. Increase in international competition will decrease the prices. The tele-communication technology is developing widely bringing about a revolution in the field of communication and is introducing new technology and others one in the designing stage.\(^{33}\)

3.2.2 Modem :

A modem is devices which connect the computer with telephone lines. Through it we can use the normal lines of telephone to communicate with others on the computer. If the modem is not available or if it is defective the we cannot connect with any other computer. The process of modulation and demodulation, that is the conversion of digital data to analog form and vice-versa, is carried out by a special device called a modem (modulator / demodulator). "Hence when an analog facility is used for data communication between two digital devices (say a terminal and a computer), two modems are required one near each digital device. The analog signal is transmitted through the telephone line, which is converted to digital form by the demodulator of the

\(^{33}\) PC Magazine Arabic, Issue 6, Vol. 9, June 2003, P. 45.
modem placed near the computer. This digital data is processed by the computer. The processed digital data is modulated to analog form and returned via the telephone line to the terminal, where the analog signals are demodulated to digital form for display on the terminal. Hence, the modem is an essential piece of hardware for any application in which two digital devices (say two computers) want to communicate over an analog transmission channel (say a telephone line)”.

3.2.3 Internet Service Providers (ISP):

The cheapest way to surf the internet is to get a connection from local internet service provider. The ISP may be a governmental organization or a private organization which offers the service on subscription to the internet. The ISP supplies programmes and other computer applications to the normal investor in order to change analog data to digital form with modem to make the transmission of information between the investor and main computer of ISP. The communication on internet is not direct communication but it is via the ISP. Through using applications and programs the ISP provides storage space on the host computer in order to save e-mails and organization’s files. The subscription cost increases and decreases with the size of storage space.

3.2.4 General Search Engines:

There are some special web sites on the internet which allow us to search for desired information available on the internet. Most of these sites also group the information available on the internet under various categories such as business, sports, entertainment, etc. These categories are also called subject guides, which are very useful for browsing

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general topics. These special web sites are called search engines. Example of search engines are:- a Yahoo, Web crawler, Alta vista, Excite, Info seek and Lyces. Accessing each engine is just like accessing any other web site. For example, we can use the http://yahoo.com URL to reach the yahoo search engine.\textsuperscript{35}

Figure 3.6 Google search engine.

3.2.5 Telephone Line:

Normal telephone lines can transmit information and computer’s data after modulating it by modem to sound signal. Using telephone lines to transmit data on internet network is an intelligent idea because the computer user can directly communicate without need for separate telephone lines. Thus we can connect the modem

with a direct telephone line to make the communication process like a normal telephone call and at the same cost. Internet has huge and numerous services. Some times these services do not present a correct picture because of losing some elements of network or other software which are not available (Multimedia: Sound, and Picture are not clear if they have an old modem without good speed). So we can’t always take the advantages of the internet services without modern technology. There is no doubt that, connecting the organization to internet network and its services is becoming easier day by day with the availability of developed organizations which are always developing their services and offering it to any person who wants to invest on the internet to design his homepage or make his advertising campaign on internet. A company like Ultimate Solution takes the responsibility of entering the small company to the electronic space world on the internet through its back age service in this field. All the information on the internet website is protected by the law and rights of websites ownership. If we want to enter and read the information we have to subscribe and pay the charges. However there are some exemptions where entering the information banks without charges is allowed and we can get the information at any time from News Group….etc. It comes to ours mind as to how one can distinguish between millions of investors on internet and the huge number of computers. The internet network offers to each subscriber a special ADDRESS which is different from other address on the NET.

**Example:**

E-mail address to specific organization on internet network

Al_hazmi@yahoo.com
The subscriber address contains three parts:

First Part: User name which is the name selected by the subscriber himself to be known among others subscribers like (Al-hazmi, Senan)

Second Part: Letter @

Third Part: Address of the host computer which the subscriber communicates through the internet network. It may contain two or three parts divided by signs like (, , /) for example (Books.MIT.EDU/GNN.COM).³⁶

Internet services are many and are increasing day by day

1. E-mail

2. News Group

3. FTP

4. TELNET

5. WWW.

Internet network works technically according to protocols that manage and control transmission of data among the net called TCP / IP (Internet protocol and transmission protocol). Others protocols are:

- FTP (File Transfer Protocol)

- SMTP (Simple Mail Transfer Protocol)

- HTTP (Hyper Text Transfer Protocol)

3.2.6 WWW / World Wide Web :

The World Wide Web which is known by www. Is a huge net from documents connected to each other, group of protocol, programs and practices for doing their work in a proper manner. WWW was invented in 1984, it includes over two billion files stored on tens of thousands computers (web servers) all over the world. 37 Web uses the techniques of Hypertext and multimedia to use internet network in an easy way and every one can contribute and use it. Web using is not a sequence in its nature and design the user can jump from subject to subject, from document to other document, from site to site. In web each page is entering a gate and we can use it to see other pages, some times we want to move from marketing document to Internet in India or to another website in Yemen only by pressing on anchor or other document. Some materials which are prepared in a traditional manner need sequence methods to open them than other web pages. Web is a system of Hypermedia wide spread oriented to global communication, the most important feature of it is that, any one or any organization can be a part of it and can participate. WWW was started in European Researcher Nucleaire (CERN) as a method to build a system of connecting and distribution adopting hyper media and hyper text, so that the scientist can see pictures, samples in addition to text, as also they can put the files anywhere in the web. Web using documents are written by HTML (Hyper Text Language). This language allows the producer offices to put definition for connection

links from specific points in files to other files, pictures, sound files, films …. etc. When we activate one of these links by choosing it and click on it we move to the joint file even if this file is available on local website or on another computer in the world, only click on any link and you will move through the space net to your website by using special internet protocol HTTP. Research emphasize that WWW is the most technologically creative internet. It allows us to get information as sound or text through electronic pages so that the subscriber can get information, advertising and entertainment wherever he wants it. Now days it is the fastest commercial way on the internet and many international companies use this service by displaying advertising pages which include details about products and services offered by the organization and introduce the ability of shopping through internet. Also subscriber in this service can choose what he wants to buy after watching it on organization’s pages and pays the price of products and services through entering the number of his credit card and the company will deliver the goods to his home directly.\textsuperscript{38} The service of WWW or World Wide Web on interne is like the difference between reading a novel and watching it on movie, world of web makes the world by pictures, sound and video, a dynamic world. Web was introduced in 1989 by European scientist when they succeeded in using the method of HYPER TEXT on the internet network. Web contains numerous pictures, sounds, so that it needs a large size storage area for programmes like Netscape Communicator and internet explorer considered as the most important web’s browsers, so that they have numerous users and they deal with different internet systems like e-mail, group news and they use different operation systems. World Wide Web (WWW) is a system which makes the exchange of

\textsuperscript{38} Baha’u, Shaheen, Ibid., Pp. 87-89.
information on internet effective and easy. In order to do that, it is necessary to make available two elements:

- **Server**: Computer and software have the responsibility of storing and distributing data to other computers who need information on all the sites of net.

- **Browser**: Software available on the personal computer of user and it orders information from web server and presents it according to the instructions that are available in the ordering data file itself. If the user wants to use the WWW he needs a computer with browser software and modem card. After operating the web browser the computer gives a communication order with service provider (which the user has already subscribed to) and gives the address to the Browser (web site address). The server responds to the order and sends a page from information, which may contain text, pictures and sounds. Some of these pictures may have special light or it may have lines under it. This light indicates that additional information is available. The user needs only to click on the light elements and the server directly responds to offer the relative information. The web can offer more pictures and text like:

1. Movies and animations
2. Files of sound and pictures in actual time
3. Data base and catalogues
4. Ability to send information to the owner of website.
The HTML language is related to the web and is an abbreviation for Hypertext Markup Language which appeared as a language which deals with higher technical matter. Since 1990 World Wide Web uses protocol of HTTP to transfer and process HTML files. The normal user doesn’t need to know the technique of TCP/IP in order to use the internet.

Figure 3.7 Netscape World Wide Web.

3.2.7 World Wide Web with Marketing:

WWW is one of the most important marketing services on the internet network and it helps in raising the marketing level of an organization through a group of factors making marketing activities very easy:
1. Customers services and technical support

2. Market research and knowledge of competitors

3. Gets the latest economical news

4. Opens conversations, direct conversation and administration facilities.

The technique of World Wide Web has only developed hypertext, depending on information service to their investors on the net. This technique gives the ability to the organization to be available on the internet network, according to features of multimedia in a special form and appearing as documents and complicated data bases through the internet network. Web is considered as the most effective method on the internet network in providing information system because of its right features and web programs applications which interpenetrate with internet’s services and application like news group, TCP technique and the FTP technique. Web is a method to build information banks to be made available to the organization at any time, containing information about the market condition so that small size organization striving for launching information about its products get information through the web. In recent time this is used due to its accepted cost and other features. Internet features becomes more effective after entering web techniques for example:

1. Home delivery through internet in selling for consumption.

2. Consumer service department becomes more effective, through direct and quick answering for the customer’s inquires.
3. Issues periodical magazines through internet

4. Makes open conversations, because web is not a traditional marketing channel, it is not in one orientation between seller and customer but it can make the consumption easy. Research indicates that World Wide Web is the system which allows any one to be available the whole day on the internet. The interactive texts, pictures, sounds and films which are already stored on computers are available to the user at any time he wants. Marketing through internet has many advantages in selling and marketing, through World Wide Web.

The most important merits of e-marketing are:

1. Availability of easy updating of catalogue, virtual in whole colures, text and sounds about its products, for current customer and prospects.

2. Availability of buying samples or information collection form directly through the net.

3. Technical support and customer services before or after selling are available to the organization’s customers, supported by pictures, explanations and sounds.

4. Ability to the world wide distribution of the organization’s products and ability to advertise about organization’s products around the world without any additional cost of postage, freight…. etc.
5. Direct selling of organization’s products without any movement from the investor office.  

6. The World Wide Web is known fondly to millions as www or simply as the web. The web is actually a superset of the internet. It can be thought of as a graphical interface to the internet providing a revolutionary way of accessing information scattered across millions of computers around the world.

Figure 3.8 technical support services of Dell Computers.

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3.3 E-MAIL:

The most common use of the internet is electronic mail (popularly known as e-mail). By using e-mail user can send picture, sound file, text program files or animated movies to any other person on the network anywhere in the world. E-mail is communication of messages and computer files between individual users` computers on the internet.

Research indicates that e-mail has the biggest share from internet usage around 85%. It is the ability to send and receive mails on the net which can quickly deliver the mail to the new organizations. The most important characteristic of electronic mail is the low cost as compared to other communications methods. E-mail is considered as one of the most important communication techniques between connected computers among the internet network in the modern age. From technical site the e-mail address like normal mail address each one is distinguished from the other by a group of features, e-mail serves services of communications between investors among the internet network at lower prices.

3.3.1 Merits of E-mail:

1. Email letters like normal letters must be written and they may be formal or informal letters.

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2. The ability to send E-mail at a convenient time to sender and the receiver can read it at his convenient time.

3. E-mail letters are consistent with multimedia techniques.

4. Higher speed in arrival and delivery of the information through e-mail as compared to other communications methods.

5. Ability to exchange information with other websites which we don’t know.

6. Electronic transmission of data gives the ability of reusing it.

7. The cost of e-mail doesn’t depend on the distance.

8. The cost of e-mail is lower than other communication methods.

3.3.2 E-mail Address:

Any user uses e-mail on internet has a distinguishable address containing many parts: 

Al_hazmi@yahoo.com, Senan@yahoo.com. We can observe that the e-mail is divided in many parts.

- Al_hazmi, Senan .Is the computer name of the user

- Word @ It means available

- Yahoo. The name of the host computer on the internet.

- Com. It indicates the kind of organization
E-mail is the ability to exchange messages and computer files between computers over computer network. It is without doubt the most commonly used internet services and it is older than the web and most people use it. We can see that, "e-mail is a type of work group information system that allows the staff and guests to communicate from different locations".\textsuperscript{43}

**Figure 3.9 Yahoo mail.**

\[\text{Image of Yahoo mail interface}\]

3.4 INTERNET LAW AND SECURITY:

There is no doubt that security problems are the most important problems when we want to speak about Internet Network with E-Commerce. We must not neglect the

importance of this subject, because of its relation with the organization’s sources. However we must not consider it as a reason to keep away from using the internet in commerce and business. We can discover the bad effect of non using of internet in our organization through our market share in the market and make a comparison with our competitors who use the internet in their business.

3.4.1 Information Law:

With the spread of internet and its services in different fields of life, it has become necessary to issue new legislations, in order to design and control the movement of dealings on the internet. So the information law was constituted and it is developing continuously. We will mention the most important recommendations of the information law. Information contract started in the beginning of the seventies of the last century to study the effects of information on the branches of law. For example France decided to recognize e-mail on the grounds of the recommendation of the United Nation Trade Committee for international trade in Vienna 1995.\textsuperscript{44} Electronic signature started and electronic terrorism spread and terrorists have the ability to destroy internet applications by putting small programmes to do that. Locally there is no factual research to protect the legality of programs, letters patents and literary property. The recommendations ensure that we have to distinguish between two kinds of information crimes:

- Crimes that use information equipment

- Information system which is likely to be damaged by the criminals.

\textsuperscript{44} Ahnmed Alhalawan, “Information’s Law”, Arab World’s Internet, V. 11, 2003, P. 48.
3.4.2 Internet Law:

An internet conference was conducted for the first time in 1994, the safety of dealing on internet and lead protection across the net and discovering new methods that have the ability to protect the commercial benefits to all in every possible way and which would be available at the time of conducting the transaction. One of its recommendations was the importance of active role of the Government as a monitor to protect commercial business that is built on the net and punish people who misbehave on the internet and information systems across the net. The case of protection still needs more research and improvement, especially for the new entrants in the business sectors who become targets of electronic crimes related to marketing on the internet and their efforts are lost since such programmes are not protected. Hence the research tries to reach a perfect equilibrium and encourage the workers in this field to study the subject of protection of the patents across the net carefully and to develop it future. Dr. Carol Okonar in his study found that, a large number of internet criminals commit internet crimes only as a hobby.45

3.4.3 Some Commercial Protection Protocols on Internet Network.

There are many protocols that assure the protection of commercial transactions on internet. Internet organizations are still competing with each other to receive clear protection in their commercial dealings across the net, and these are the most important protection protocol:-

45 Carol ,Okonar, Techniques of Successful Sale, Bariout : Arabian Center, 2004, P. 120.
- **Safety HTTP Protocol**: 

  It has been developed by many companies. There are EIT (Enterprise Integration Technologies), NCSA (National Center for Super Computer Applications) and RSA Data Security. It is a protocol for transmission that makes secure exchange easy between user and provider, by using data entering sample. User can click on it and the program makes present using tour safety. Now days the program is offered to the members of commerce net. There is more information about it in this web site. Http :// www. Commerce. Net / work / sets / index . html. Or in this e-mail : shttp _ infa@eit.com.

- **First Virtual Holdings (FVH)**:

  It was established by First Virtual Holdings company. It is a system to connect between Banks and companies of credit card and companies that do their work on internet and internet’s customer. This system verifies from the perfection of exchanges and it includes control systems to investigate the problems and information safety.  

- **Net Cash**:

  It is developed by the Institute of Information Science, South California University. It is a system which depends on “Coupons” or virtual money that is used across e-mail. The net bank which connects to NetCash issues coupons and exchanges it and takes a commission of about 2%. Net cash focusing on small electronic payments (small exchanges in order to get services or information) is always less than 100$, some times it in cents. We can get more information about it from: http://www.teleport.com/ and

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help@agents.com. In the same way the institute developed the Net Cheque as a system for electronic payment like normal cheques. The arrangements to subscribe are made in advance. We can exchange cheques by using e-mail or others network protocol, the net cheque gives that ability to the seller to take the money from buyer as in normal cheques and verifies the signature on the cheque. We can get more information in http://niiserver.isi.edu/info/netcheque.

- **Net Bill** :

It is another system which allows making electronic payment on internet. It is developed by researchers at Carnegie Mellon University. It offers a method to earn money through small payments (each time small payment) by dependence on large numbers of exchange. We can get information in http://www.ini.cmu.edu/netbill/.

### 3.4.4 Limitations of Internet:

While the internet has several advantages it also suffers from many limitations including:

- **Bandwidth limitations**: It suffers from the Bandwidth, which creates a barrier in front of connection to small house and business.

- **Quality of service limitations**: We need information in the fastest way as possible, to be available at the right time at right place to take decisions but some times the route of transmission of the information is of very bad quality causing limitations in front of the user to receive information.
Network architecture limitations: Today a thousand requests for single music track from a central server will result in a thousand efforts by the server to download the music to each requesting client.

Language development limitations: HTML the language of web pages has a fine a text and simple graphics, but is very poor at defining and communicating items like databases, business documents or graphics.  

System security, reliability, standards and some communication protocols.

Vendors may need special web servers, network servers and other infrastructure developments.

Software development tools are still evolving and changing rapidly.

2.4.5 Legal Considerations of Internet:

Fast use of internet and its relation with information technology and increase in the economical importance of computer and information technology, also commercial uses of internet. All these developments have led to the increase in problems as also new problems have appeared concerning legal aspects and several countries have been forced to enact legislation in the matter. These efforts started in the sixties of the last century till today. We can classify this legislation as under:-

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• Legislations related to privacy: These deal with the legal responsibility of offences relating to people and organizations for exposing their data and secrets stored in computers and network.

• Legislation related to computer criminals: It deals with legal responsibility of offence to people, organizations and their money, rights in data and information that has economical value.

• Legislations related to literary property: These cover the fields of protecting the computer programs, all digital sources and nearly all legal aspects that cover the new orientations in electronic economics.

• Legislations related to penalty proceedings: These deal with new rights in the field of information technology.

• Legislations related to harmful contents: There is a view to put this under information security like European countries but others want to separate it as U.S.A.

• Legalizations of information security. 49 It was developed to protect legislation of standards to transfer data, information, and coding.

• Legislations related to electronic money and technology of financial and banking services: These legislations cover the fields of electronic exchange, credit card, and E-banking.

• Legislations related to taxes, investments, trading, government rules and customs which are related to technology projects.

• Legislations related to E-Commerce: These legislations cover several aspects like E-shopping, E-sign and E-contract. These legislations include rules related to all fields of information technology.

• Legislations, contracts and conventions of specialty.  