Internet Explosion / Growth and Access

A survey showed that 74.7% Americans felt television had contributed to the breakdown of the American family and 83.8% felt TV and movies had influenced or caused an increase in "crime". In view of the above facts, a question may be asked who want Internet and for what purposes? In order to answer this "loaded" question, we must first examine the rate of expansion of Internet around the World.

This section presents various statistical data collected from various different surveys carried out by a number of independent organizations.

The interested major groups for Internet are corporate (46%), academic (15%), recreational consumers (27%) and occupational (12%). The users of the Internet are 87% white, 5% African-American, 3% Hispanic and 3% Asian.

The top reasons for using are entertainment (51%), news (49%), travel (30%), computer production (41%) and financial (26%). However, only 28% of consumers considered video on demand highly desirable. Fifty seven percent (57%) Americans would like to participate in interactive, electronic town-hall meetings with political leaders and other citizens; and 46% want to send text or E-mail to elected representatives.

During 1996, more than 6400 articles were published on various subjects such as games (243), education (152), travel (78), entertainment (226), investment (151), finance (81), sport (58), medical (72), security & privacy (900), shopping (ISO), newspaper (25) and on social implications (40).

Growth in the number of hosts station around the world has been un-imaginable. Let us review some of the top growth countries China (1003%), Malaysia (686%), Indonesia (521%), Peru (518%), Brazil (305%), Finland (148%), Japan (211%), Singapore (368%) and England (99%).

23% of the Americans over the age of 16 years have access to the Internet. $23 Billion will be spent worldwide on Internet by year 2000. USA generates 70% of the total traffic. However non-USA traffic is growing more than twice the USA growth rate. Average time on-line is about 2 hour daily. It is interesting to note that there were only 15 Million USA Internet users in 1995. By 1996 this number has increased to 48 Million. The numbers of Web server responses were only 60k in early 1996 but it has jumped to more than 500k by the year-end. It is estimated that 75% of Fortune 1000 companies will have Internet access by mid 1998. The number of Internet users is projected to be 163 Million by year 2000. The number Europeans Internet subscribers by year 2002 may be 200 Million.

Access to Internet is available not only at home and office but also in cafes which will operate like coin telephones. In fact, there are ten coin operated Internet access terminals are in operation in various cafes in Los Angles, USA.

Advertising via Internet is a big business. It is estimated that the advertisement revenue generated by Web for year 1997 to 2001 is $0658, $1.6B, $3, 15B, $4.53B and $59 Billion respectively.

It is interesting note that in computer literacy and availability, Japan is surprisingly defiant. Only 20% of business people use PCs vs. 90%-plus in America and 50% in Europe.

In view of the above factual data, the importance of using PC can not be over emphasized. Our family members including housewives must learn about the PC. Using PC will become as common and important as to know how to drive a car in a western country. With the above rate of expansion

of Internet let us examine a number of other key social implications / factors of the future information networks.

Overall Implications of Information Networks

The Internet's implications can be studied in five domains:

1) Inequality (the "digital divide");
2) Community and social capital; (**or Social implications**)
3) Political participation;
4) Organizations and other economic institutions; and
5) Cultural participation and cultural diversity.

Here, we are concerned about the 2) Community and Social Capital, which discusses about the social implications of Information Networks.

Social Implications of Information Networks

Privacy

The interactive systems from the home accumulate an awful lot of information on individual behavior, not only what people buy, but how they vote, the books and entertainment they like, etc. Prodigy admitted that their computers could and did collect the information from their subscribers at their will without the knowledge of the subscribers.

For these reasons, Marc Rotenberg of the Electronic Privacy Information Center (EPIC) stated to the US congressional committee "Americans have grown up watching television. Now a new generation would grow up with television watching them".

North Carolina Information Superhighway is working to develop a criminal information network that will be useful throughout the state both to officers on patrol and to officers of the court, such as prosecutors and judges.

The US government favors two initiatives that horrify privacy advocates. One tries to coax industry to use an encryption technology, the so-called Clipper chip, that lets government listen in on otherwise secure communications. The other is proposed legislation that would give federal agents and policemen unprecedented authority to watch every move people make on-line. Some industry analysts believe that these schemes may prevent some companies from putting on the superhighway new services that cannot be engineered to permit access by law enforcers. There is also tremendous pressure on government for deregulation, especially in telecommunication industry.

Security

The National Computer Security Association (NCSA) held a conference in January 1994 to discuss the security issues and a number of questions were discussed such as

- Who will be the traffic cops on the network?
- How will I keep my information private?
- Is this network similar to Internet where hackers, thieves, network surfers and all sorts of undesirables are after my data?
- How can I protect my system if it is connected to the network?

Questions after questions were asked but unfortunately very few real answers were given.

Let us examine some of the real incidents that had happened recently.

- An imposter posing as a Texas A&M professor sent out hate e-mail containing racist comments to thousands of recipients. He was still not found. Unfortunately the poor professor still has to face the "music" even today.

- A student at Dartmouth University sent out Email over the signature of a professor late one night during the exam period. Claiming a family emergency, the forged mail canceled the next day exam, and only a few students showed up.

- 42 pizza delivering boys arrived at a house at the same time.

Firewalls

Internet firewalls offer protection against attacks from outsiders, but they can never provide complete protection for a network. Firewalls force all users to enter and leave at a specific point, allowing the company to closely monitor all traffic.

The firewalls can also prevent unapproved services from entering the network. Firewalls protect the network from spreading a specific problem from one part of the network to another part of the network. Firewalls offer no protection from internal users with malicious intentions. Firewalls are designed to guard against the known threats, but they may be less successful when guarding against new threats. Firewalls do not block viruses.

The electronic messaging association has developed a white paper to help companies develop an e-mail policy, and baseline software's information security policies made easy provides more than 700 policies in addition to policy templates.

According to legal and policy experts, the company has a right to read employee e-mail. In view of the above can we really say that an individual will have privacy or personal security during the course of the Information Superhighway?

Globalization of labor force

Network connection to developing countries is already boosting software development business. Several well-known computer companies in the USA and Europe are taking the advantage of the availability of cheaper and highly skilled workforce in the field of software engineering. These computer companies are working with some local software developing companies in Pakistan and India. Networking has shown clear advantages in this situation.

Software products are developed and files are transferred to contracting companies in USA or Europe. The software development cycle is quite efficient. This type of activity allows those companies to remain competitive in market. This approach is leading towards the globalization of labor force and the large companies are really becoming "truly international" organizations. Another advantage of Globalization of labor force will be less brain drain from the developing countries and at the sometime it will improve the standard of living due to higher wages paid by the International companies as compared to the local employers. However local employers will have difficult time in retaining and hiring of high caliber staff. This will be one the most important challenges for the developing nations to face in the advent of the Information Superhighway.

Children development -- excessive information available

Teachers and parents will interactively assess student academic and extracurricular progress. With all boundaries removed, creative educators will be free to explore new ways of teaching and motivating our kids. Inadequate teacher training has been a huge obstacle and may continue in the future. School districts spend 90% of funds on new equipment and only 10% on teacher training.

Seymour Papert, M.I.T., envisions a day when children will have access to what he calls the "Knowledge Machine". This machine will allow children to explore areas of intellectual interest without any barriers such as limitations on the school library, etc. The addition of smell or touch would revolutionize the learning process.

Some educators predict that within the next decade, families will be able to log on to school through their computers. This kind of communication would be particularly useful in the rural areas where transportation can be a difficult problem.

Office of the future

The most visible social change for a white-collar worker will be the disappearing of his normal desk. In addition, there will be no need to be physically present in the office every day. At IBM in New Jersey, there are only 220 desks for the 650 sales and service staff. This concept is called *"hoteling"*. The virtual office is the one where can sit anywhere you want and be connected. Portable jobs will allow firms to save on everything from travel to real estate. Personal video conferencing is projected to be doubled over the next three years.

Computer and Telecommunications companies (IBM, AT&T, GTE, US WEST, APPLE, AST, COMPAQ, etc.) have already cut more than 200,000 jobs. This is one of the casualties of the information economy.

Mobility

Telephones will grow smaller, lighter, less expensive and more powerful. Personal digital assistants (PDAs), screen-based phones and "smart" cable boxes that will also be used to access digital data. PDAs are turning from electronic day-timers into wireless communications devices that let you link up with a highway in the sky. The key is a credit card size communications module that fits into many communication systems for various applications that basically based on pager technology. A number of companies plan to introduce smart phones, devices that let you call your mother, catch up on the news, check stock prices, and pay your bills using the devices built-in LCD and touchpad.

Motorola has ordered 66 satellites from Lockheed for its Iridium project which worth about $3.5 billion for mobile communication. Microsoft and McCaw Cellular have proposed a $ 9 billion plan to launch 840 communication satellites by the year 2001.

Paperless society

With customers in control of the information, advertisers will have to rethink what to sell, how to sell it, and how to make consumers pay attention. Sales of computer games and games machines expected to double by 1999 at least $15 billion. It is predicted that by on-line and interactive-TV sales could total closer to $20 billion by 1998. By 1995, it is estimated that 40 percent of all computers purchased in U.S.A. will be used in homes. With the introduction of computers and electronic devices, the normal media (paper) of conveying information and / or messages will be minimized and most likely be totally eliminated. Hence the society will become a paperless society. This change may not be an easy task for people particularly over 35 - 40 years now. In our present society, physical touch plays an important role. Office staff as well as housewives have to be re-trained and re-developed new criteria for the selection of furniture and decoration.

Impacts on our social life

All these technological and economical developments are bound to have impacts on our social life. At this moment, it is very difficult to determine exactly what will be the fundamental changes in our social behavior. However, some of the obvious expected changes and impacts on the society are projected to be:

- "We will live part of our lives in the world of cyberspace in the world of virtual reality" – Jaron Lanier, *father* of virtual reality.

- "It will revolutionize and expedite the educational process, free up valuable land that can be restored to its natural state, reduce the frequency of ground and air travel (and thus pollution), and deliver three-dimensional pictures and sound, enabling people to spend less time doing mundane things and more time thinking" - Shelly Duvall, Think Entertainment.

- The information age, learning will be a lifelong process.

- In a world of information glut, it becomes progressively harder to sift the useful from the useless, the important from the trivial, the true from the false. In such a world, the database itself supplies no standards for judging one piece of information superior to or more useful than another. Indeed, in such a world, standards cease to matter. Information itself becomes background noise, like the constantly running tap that television has already become. Is this progress?

- Cultural and religious norms will face serious pressure to change the "standards" and may result in family conflicts and communication gap probably will be widen among the family members of "two young generations".

- On the hand a number of public interest groups shudder at the thought of applying this technology to on-line gambling.

- Finally, it will ultimately change the way everybody does business and communicates with each other.

Impacts on Time Use, Community and Social Capital

Initially it was anticipated that the Internet would boost efficiency, making people more productive and enabling them to avoid unnecessary transportation by accomplishing online tasks like banking, shopping, library research, even socializing online. More recently, some studies have suggested that the Internet may induce anomie and erode social capital by enabling users to retreat into an artificial world. We will study these aspects in this section below.

Time Displacement

Much of the debate over social capital is about whether the Internet attenuates users' human relationships, or whether it serves to reinforce them.

Internet users may substitute time online for attention to functionally equivalent social and media activities. Internet users may reduce the time devoted to off-line social interaction and spend less time with print media, as well as with television and other media. Conversely, some different studies have shown that Internet users read more literature, attended more arts events, went to more movies, and watched and played more sports than comparable nonusers.

A research found Internet use substituted for other interactions. Higher levels of Internet use were "associated with declines in communication with family members, declines in social circles, and increased loneliness and depression."

The effect of Internet use may vary with user competence also. Compared to experienced Internet users, the novices engaged in more aimless surfing, were less successful in finding information, and were more likely to report feeling a souring of affect over the course of their sessions. Their negative reactions reflected not the Internet experience but the frustration and sense of impotence of the inexperienced user without immediate access to social support.

Community

Internet has contributed to a shift from a group-based to a network-based society that is decoupling community and geographic propinquity. Moderate to heavy-users' self-reported that there is substitution of email for telephone contact as part of their loss of "contact with their social environment." Some users say that Internet enhances social ties defined in many ways, often by reinforcing existing behavior patterns. Internet puts users in more frequent contact with families and friends, with email being an important avenue of communication.

The Internet makes it easy for people at a distance to assemble and communicate with many others at the same time through chat rooms or online discussion forums like virtual communities, interactive networks. Compared to real-life social networks, online communities are more often based on participants' shared interests rather than shared demographic characteristics or mere propinquity. Nonetheless, issues related to racial, gender, and sexual dynamics do permeate and complicate online interactions.

Internet users maintain community ties through both computer-mediated communication and face-to-face interaction. Although they maintain more long-distance relationships than do non-Internet users, they communicate even more with their neighbors. Although the Internet helps maintain contact over long distances, most email contacts are between people who also interact face-to-face. In other words, the Internet sustains the bonds of community by complementing, not replacing, other channels of interaction.

Social Capital

Internet facilitates the creation of social capital and other public goods by making information flow more efficiently through residential or professional communities. Increased Internet use tended to have a direct positive effect on social capital (by increasing the as participation in community networks and activities) and a positive indirect effect through social capital on political participation. Internet builds social capital by enhancing the effectiveness of community-level voluntary associations.

Internet also provides significant benefits to people with unusual identities or concerns (e.g., rare medical conditions). But there is some evidence that "social capital" produced by less focused networks is rather thin.

As a drawback of the Internet, it has also been described as an inexpensive and effective means of organizing oppositional social movement.

Morals of these Impacts

1) Internet has no intrinsic effect on social interaction and civic participation.

2) Internet use tends to intensify already existing inclinations toward sociability or community involvement.

3) We need to know more than we do about the qualitative characters of online relationships.

4) We know that virtual communities exist in large number, but we know relatively little about their performance.

5) We need more systematic studies of how civic associations and social movements use the Internet

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Source:

- Jaleel Syed Hasan, *Information Superhighway and its Social Implications*
- Paul DiMaggio, Eszter Hargittai, W. Russell Neuman and John P. Robinson, *Social Implications of the Internet*