

CYBERSPACE – FOUNDATION OF INTERNET

Dr. Ramchandra Pawar

Professor & Head Research,

Padmashree Dr. D. Y. Patil Institute of MCA, Pradhikaran, Akurdi, Pune

ABSTRACT

The word cyberspace was introduced by William Gibson in his science fiction novel, Necromancer, published in 1984. It has subsequently become widely used as a means of denoting the apparent or virtual location within which electronic activities are undertaken. [8]. The operation of the keyboard by a computer operator produces a virtually instantaneous result on the magnetic disk of the computer even though it may be 10,000 miles away.

As has been mentioned earlier, the term (Cyberspace) denotes the concept of a quasi-physical territory which is helpful in attempting to analyze the issues involved with computer communication. The geographical location where such conduct occurs is one of the major factors determining which country's laws would apply to such activities. The operations of global network pay little observe to national physical boundaries and there is need for a new legal perspective and regime in cyberspace. In the era of digital technology and context of electronic commerce, comparison is sometimes made with the development of the Mercantile law which was developed in the Middle. Various laws relating to broadcasting, the media, data protection, criminal procedure, and evidence, contract, tort, defamation, intellectual property all have a role to play as do provision of civil and criminal law. Indeed, the immures inhabitants of cyberspace may be, at least in theory, the most massively regulated individuals in the world in that. Depending upon the nature of their activities, they may theoretically be subject to the jurisdiction of virtually all of the world's legal systems which constantly remind them to exhibit safe behavior on net [9].

A term used in conjunction with virtual reality, designating the imaginary place where virtual objects exist. For example, if a computer produces a picture of a building that allows the architect to "walk" through and see what his design would look like, the building is said to exist in cyberspace.

Keywords: *Cyberspace, Law, Global Network, Digital Technology*

INTRODUCTION

The Internet as a whole, considered as an unfinished cyberspace. Although this usage became widely popular in the mainstream press during 1994 when the Internet exploded into public awareness.

Some hackers report experiencing strong imagery when in hack mode; interestingly, independent reports from multiple sources suggest that there are common features to the experience.

Cyberspace is a domain characterized by the use of electronics and the electromagnetic spectrum to store, modify, and exchange data via networked systems and associated physical infrastructures [10]. The term originates in science fiction, where it also includes various kinds of

virtual reality experienced by deeply immersed computer users or by entities who actually exist inside computer systems.

The word "cyberspace" (from cybernetics and space) was coined by science fiction novelist and seminal cyberpunk author William Gibson in his 1982 story "Burning Chrome" and popularized by his 1984 novel *Neuromancer*. The term Cyberspace started to become a de facto synonym for the Internet, and later the World Wide Web, during the 1990s, especially in academic circles and activist communities. Author Bruce Sterling, who popularized this meaning, credits John Perry Barlow as the first to use it to refer to "the present-day nexus of computer and telecommunications networks." Barlow describes it thus in his essay to announce the formation of the Electronic Frontier Foundation (note the spatial metaphor) in June, 1990 [11].

In this silent world, all conversation is typed. To enter it, one forsakes both body and place and becomes a thing of words alone. You can see what your neighbors are saying (or recently said), but not what either they or their physical surroundings look like. Town meetings are continuous and discussions rage on everything from sexual kinks to depreciation schedules. Collectively, they form what their inhabitants call the Net. It extends across that immense region of electron states, microwaves, magnetic fields, light pulses and thought which science fiction writer William Gibson named Cyberspace[12].

While cyberspace should not be confused with the real Internet, the term is often used to refer to objects and identities that exist largely within the communication network itself, so that a web site, for example, might be symbolically said to "exist in cyberspace." According to this interpretation, events taking place on the Internet are not therefore happening in the countries where the participants or the servers are physically located, but "in cyberspace".

Cyberspace is the "place" where a telephone conversation appears to occur. Not inside your actual phone, the plastic device on your desk. Not inside the other person's phone, in some other city. The place between the phones. ...in the past twenty years, this electrical "space," which was once thin and dark and one-dimensional, stretching from phone to phone -- has flung itself open like a gigantic jack-in-the-box. Light has flooded upon it, the unnatural light of the glowing computer screen. This dark electric netherworld has become a vast flowering electronic landscape. Since the 1960s, the world of the telephone has cross-bred itself with computers and television, and though there is still no substance to cyberspace, nothing you can handle, it has a strange kind of physicality now. It makes good sense today to talk of cyberspace as a place all its own[13].

HISTORY AND EVOLUTIONS

The history of the internet dates back to 1960. The advance research project Agency (ARPA) of the United State Department of Defense developed a network of computer called 'ARPANET'. This network connected only military and government computer system. Its purpose was to make these system secure in the event of a disaster or war. Soon after the creation of the ARPANET, universities and other institution developed their own computer network. In due course of time these network were eventually merged with ARPANET to form the internet [5]. By the early 1990 any one with computer modem and internet software was able to link up with network. Now the internet connects a hundred thousand networks the entire world over. These include

universities and college network, big corporate network, Government network and a host of other publicly accessible networks. Thus, it connects millions of computers around the world and no one knows the exact number.

THE HOME COMPUTERS

The first personal computer, the 'Altair' was made in the year 1975. In 1977, two American students, Steven P. Jobs and Stephen G. Wozniak, founded the Apple computer company in the United States. The Apple II personal computer was introduced subsequently. The Apple II was much cheaper than the mainframe. As a result, computers became more affordable [1]. Small-scale businesses started computerization using the personal computer. Millions of individuals, families, school and other establishments also started buying computers.

In 1981, IBM entered the personal computer market with the PC. It used an operating license from Microsoft, which was based in Redmond, Washington USA. The operating system was named DOS. It used command –line interface. The flexibility and adaptability of DOS made it the most successful PC operating, by mid-eighties. Another successful operating system from early 1980's was UNIX Developed by the US company Bell Laboratories, it also used a command-line interface but allowed multitasking (several users doing different things on the same system at the same time). Like DOS, UNIX was also flexible and became particularly popular with network computer of large business houses and universities. UNIX had many inbuilt security measures[2].

An easy-to-use computer, Apple Macintosh, with a Graphical User Interface (GUI) was in introduced by Apple computer in 1984. In a GUI, the user is presented with a menu of choices with pictures (icons) arranged in boxes (windows) representing programs and application. GUI's were made possible because computers in the 1980's and 1990's became, faster and more powerful. In the late 1990's, RISC technology increased computer speed and capacity. RISC computers use microprocessor that work at high speed because they carry the circuitry for performing fewer operations than those of other computers.

In 1986, Microsoft launched its rival GUI, Windows, to run on IBM PC's and similar machines. Windows outsold Apples Macintosh system and, in 1995, Microsoft launched an advanced version of its GUI, Windows 95.

THE INTERNET

The computer's ability to share a data with other computers over a network linked through telephone has led to a major telecommunication revolution. A computer network is a network consisting of a central computer (Server) and number of remote station, say 20-30, that report to it. Networking has led to the concept of Cyberspace. 'Cybernetics' according to chambers dictionary is the comparative study of automatic communication and control in functions of living bodies and in mechanical electronic system (such as computer).

The control function take a place in the brain in the human body, and the word 'Cyber' has evolved to denote a virtual space or memory [3].

“Cyber is analogous to human memory” ; that is to say it denotes the medium in which certain activities take a place like the way thoughts work in human memory. Here activities take a place in back end of a computer and the results are displayed in the monitor [4]. The activities taking a place /data stored in computers can not be felt by any of the human senses. That is to say such activity/ data are not in a ‘Hard form’. Hence, we call the data/document stored in the electronic form as ‘soft copies’ which could be retrieved at any point of time and visualized in the monitor.

CONCLUSION

The "space" in cyberspace has more in common with the abstract, mathematical meanings of the term than physical space. It does not have the duality of positive and negative volume, but spatial meaning can be attributed to the relationship between different pages, considering the unturned pages to be somewhere "out there." The concept of cyberspace therefore refers not to the content being presented to the surfer, but rather to the possibility of surfing among different sites, with feedback loops between the user and the rest of the system creating the potential to always encounter something unknown or unexpected. Some virtual communities explicitly refer to the concept of cyberspace, e.g. Linden Lab calling their customers "Residents" of Second Life, while all such communities can be positioned "in cyberspace" for explanatory and comparative purposes (as Sterling did in *The Hacker Crackdown* and many journalists afterwards).

Cyberspace is a domain characterized by the use of electronics and the electromagnetic spectrum to store, modify, and exchange data via networked systems and associated physical infrastructures. The term originates in science fiction, where it also includes various kinds of virtual reality experienced by deeply immersed computer users or by entities who actually exist inside computer systems.

By considering above discussion it is clear that to go for internet cyberspace is the essential thing without which the internet cannot work or even without which internet cannot come in to existence, so here we conclude that cyberspace is Foundation of Internet.

REFERENCES

- [1] Steele, R. D., *Information operations: Putting the “I” back into DIME*. Carlisle Barracks: Strategic Studies Institute, 2006
- [2] Stoll, C., *The cuckoo’s egg: Tracking a spy through the maze of computer espionage*. New York: Pocket Books, 1990
- [3] Gallagher, C. J. J., *Low-intensity conflict: A guide for tactics, techniques, and procedures*. Mechanicsburg, PA: Stackpole Books, 1992
- [4] Sukhai, N. B. *Hacking and cybercrime*. Paper presented at the InfoSecCD Conference, Kennesaw, GA, 2004
- [5] Fleming, B., *Can reading Clausewitz save us from future mistakes*. *Parameters*, 2004, 62-76.
- [6] Neil Weinstock Netanel, “Cyberspace Self-Governance: A Skeptical View from Liberal Democratic Theory”, *Calif. L. Rev.*, Vol. 88, p.395, 2000.
- [7] Forno, R., & Baklarz, R., *The art of information warfare: Insight into the knowledge warrior philosophy*. Dunkirk, MD: Universal Publishers, 1997

- [8] The Government of the United States. (2004). The 9/11 Commission report: Final report of the national commission on terrorist attacks upon the United States (Authorized Edition ed.). New York: Norton & Company, 2004
- [9] Thom, M. C., Information warfare arms control: Risks and costs. Colorado Springs Colorado: USAF Institute for national security studieso, 2006
- [10] Fabrizio Marrela and Christopher S Yoo,"Is Open Source Software the new lex Mercatoria ?",Research paper No. 07-31
- [11] Wilson, C., Information operations and cyberwar: Capabilities and related policy issues (No. RL31787): Congressional Research Service: The Library of Congresso.2006
- [12] Ning, P., & Xu, D., Learning attack strategies from intrusion alerts. Paper presented at the 10th ACM conference on Computer and communications security, Washington DC.2003
- [13] Orris, M.,You've got hate: Web based terror. Small Wars Journal, 8(May), 2-10.2007
- [14] <http://www.internetworldstats.com/>
- [15] www.answers.com/topic/cyberspace.