SOS POLITICAL SCIENCE AND PUBLIC ADMINISTRATION

MBA FA 401

SUBJECT NAME: COMPUTER APPLICATIONS IN FINANCIAL ADMINISTRATION

UNIT-V

TOPIC NAME: INTERNET: CONCEPT & DEFINITION

Before knowing about any topic in detail we should have full knowledge about its history. Firstly here we discuss about the history of internet and then its meaning and other important terms.

HISTORY:

The Advanced Research Projects Agency (ARPA) of the United States Department of Defense funded research into time-sharing of computers in the 1960s. Meanwhile, research into packet switching, one of the fundamental Internet technologies, started in the work of Paul Baran in the early 1960s and, independently, Donald Davies in 1965. Packet switching was incorporated into the proposed design for the ARPANET in 1967 and other packet-switched networks such as the NPL network, the Merit Network, and CYCLADES were developed in the late 1960s and early 1970s.

ARPANET development began with two network nodes which were interconnected between the Network Measurement Center at the University of California, Los Angeles (UCLA) Henry Samueli School of Engineering and Applied Science directed by Leonard Kleinrock, and the NLS system at SRI International (SRI) by Douglas Engelbart in Menlo Park, California, on 29 October 1969. The third site was the Culler-Fried Interactive Mathematics Center at the University of California, Santa Barbara, followed by the University of Utah Graphics Department. In a sign of future growth, fifteen sites were connected to the young ARPANET by the end of 1971. These early years were documented in the 1972 film Computer Networks: The Heralds of Resource Sharing.

Early international collaborations for the ARPANET were rare. Connections were made in 1973 to the Norwegian Seismic Array (NORSAR) via a satellite station in Tanum, Sweden, and to Peter Kirstein's research group at University College London which provided a gateway to British academic networks. The ARPANET project and international working groups led to the development of various protocols and standards by which multiple separate networks could

become a single network or "a network of networks". In 1974, Vint Cerf and Bob Kahn used the term internet as a shorthand for internetworking in RFC 675, and later RFCs repeated this use. Cerf and Khan credit Louis Pouzin with important influences on TCP/IP design. Commercial PTT providers were concerned with developing X.25 public data networks.

Access to the ARPANET was expanded in 1981 when the National Science Foundation (NSF) funded the Computer Science Network (CSNET). In 1982, the Internet Protocol Suite (TCP/IP) was standardized, which permitted worldwide proliferation of interconnected networks. TCP/IP network access expanded again in 1986 when the National Science Foundation Network (NSFNet) provided access to supercomputer sites in the United States for researchers, first at speeds of 56 Kbit/s and later at 1.5 Mbit/s and 45 Mbit/s. The NSFNet expanded into academic and research organizations in Europe, Australia, New Zealand and Japan in 1988–9. Although other network protocols such as UUCP had global reach well before this time, this marked the beginning of the Internet as an intercontinental network. Commercial Internet service providers (ISPs) emerged in 1989 in the United States and Australia. The ARPANET was decommissioned in 1990.

Steady advances in semiconductor technology and optical networking created new economic opportunities for commercial involvement in the expansion of the network in its core and for delivering services to the public. In mid-1989, MCI Mail and CompuServe established connections to the Internet, delivering email and public access products to the half million users of the Internet. Just months later, on 1 January 1990, PSInet launched an alternate Internet backbone for commercial use; one of the networks that added to the core of the commercial Internet of later years. In March 1990, the first high-speed T1 (1.5 Mbit/s) link between the NSFNET and Europe was installed between Cornell University and CERN, allowing much more robust communications than were capable with satellites. Six months later Tim Berners-Lee would begin writing Worldwide Web, the first web browser after two years of lobbying CERN management. By Christmas 1990, Berners-Lee had built all the tools necessary for a working Web: the Hypertext Transfer Protocol (HTTP) 0.9, the Hypertext (HTML), the first Web browser (which was also a HTML editor and could access Usenet newsgroups and FTP files), the first HTTP server software (later known as CERN http), the first web server, and the first Web pages that described the project itself. In 1991 the Commercial Internet exchange was founded, allowing PSInet to communicate with the other commercial networks CERF net and AlterNet. Stanford Federal Credit Union was the first financial institution to offer online Internet banking services to all of its members in October 1994. In 1996 OP Financial Group, also a cooperative bank, became the second online bank in the world and the first in

Europe. By 1995, the Internet was fully commercialized in the U.S. when the NSFNet was decommissioned, removing the last restrictions on use of the Internet to carry commercial traffic.

As technology advanced and commercial opportunities fueled reciprocal growth, the volume of Internet traffic started experiencing similar characteristics as that of the scaling of MOS transistors, exemplified by Moore's law, doubling every 18 months. This growth, formalized as Edholm's law, was catalyzed by advances in MOS technology, laser light wave systems, and noise performance.

Since 1995, the Internet has tremendously impacted culture and commerce, including the rise of near instant communication by email, instant messaging, telephony (Voice over Internet Protocol or VoIP), two-way interactive video calls, and the World Wide Web with its discussion forums, blogs, social networking, and online shopping sites. Increasing amounts of data are transmitted at higher and higher speeds over fiber optic networks operating at 1-Gbit/s, 10-Gbit/s, or more. The Internet continues to grow, driven by ever greater amounts of online information and knowledge, commerce, entertainment and social networking. During the late 1990s, it was estimated that traffic on the public Internet grew by 100 percent per year, while the mean annual growth in the number of Internet users was thought to be between 20% and 50%.This growth is often attributed to the lack of central administration, which allows organic growth of the network, as well as the non-proprietary nature of the Internet protocols, which encourages vendor interoperability and prevents any one company from exerting too much control over the network. As of 31 March 2011, the estimated total number of Internet users was 2.095 billion (30.2% of world population). It is estimated that in 1993 the Internet carried only 1% of the information flowing through two way telecommunication, by 2000 this figure had grown to 51%, and by 2007 more than 97% of all telecommunicated information was carried over the Internet.

MEANING:

The Internet is the global system of interconnected computer networks that uses the Internet protocol suite (TCP/IP) to link devices worldwide. It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries a vast range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), electronic mail, telephony, and file sharing.

The origins of the Internet date back to the development of packet switching and research commissioned by the United States Department of Defense in the 1960s

to enable time-sharing of mainframe computers. The primary precursor network, the ARPANET, initially served as a backbone for interconnection of regional academic and military networks in the 1970s. The funding of the National Science Foundation Network as a new backbone in the 1980s, as well as private funding for other commercial extensions, led to worldwide participation in the development of new networking technologies, and the merger of many networks. The linking of commercial networks and enterprises by the early 1990s marked the beginning of the transition to the modern Internet, and generated a sustained exponential growth as generations of institutional, personal, and mobile computers were connected to the network. Although the Internet was widely used by academia in the 1980s, commercialization incorporated its services and technologies into virtually every aspect of modern life.

Most traditional communication media, including telephony, radio, television, paper mail and newspapers are reshaped, redefined, or even bypassed by the Internet, giving birth to new services such as email, Internet telephony, Internet television, online music, digital newspapers, and video streaming websites. Newspaper, book, and other print publishing are adapting to website technology, or are reshaped into blogging, web feeds and online news aggregators. The Internet has enabled and accelerated new forms of personal interactions through instant messaging, Internet forums, and social networking. Online shopping has grown exponentially both for major retailers and small businesses and entrepreneurs, as it enables firms to extend their "brick and mortar" presence to serve a larger market or even sell goods and services entirely online. Business-to-business and financial services on the Internet affect supply chains across entire industries.

The Internet has no single centralized governance in either technological implementation or policies for access and usage; each constituent network sets its own policies. The overreaching definitions of the two principal name spaces in the Internet, the Internet Protocol address (IP address) space and the Domain Name System (DNS), are directed by a maintainer organization, the Internet Corporation for Assigned Names and Numbers (ICANN). The technical underpinning and standardization of the core protocols is an activity of the Internet Engineering Task Force (IETF), a non-profit organization of loosely affiliated international participants that anyone may associate with by contributing technical expertise. In November 2006, the Internet was included on USA Today's list of New Seven Wonders.

DEFINITION OF INTERNET:

1. In noun sense:

- A vast computer network linking smaller computer networks worldwide (usually preceded by the). The Internet includes commercial, educational, governmental, and other networks, all of which use the same set of communications protocols.

2. General definitions:

- An electronic communications network that connects computer networks and organizational computer facilities around the world used with the except when being used attributively.
- The Internet, sometimes called simply "the Net," is a worldwide system of computer networks. A network of networks in which users at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computers).

FEATURES OF INTERNET:

The Internet is a unique medium with global impact, and within a relatively few number of years has become inextricably intertwined with the conduct of almost all human activity. The following sections describe the key features of the Internet which have contributed to this world-wide success:

1. Geographic Distribution
2. Robust Architecture
3. Near Light Speed
4. Universal Access
5. Internet Growth Rates
6. The Digital Advantage
7. Freedom of Speech

1. Geographic Distribution: The geographic distribution of the Internet continues to spread, around the world and even beyond.

A key attribute of the Internet is that once you have connected to any part of it, you can communicate with all of it. All of the Internet's technologies web, newsgroups, email, mailing lists, IRC, MUD's enable geographically distributed groups of people to communicate who otherwise couldn't do so. Largely because the basic architecture of the Internet is open fundamentally designed to connect new networks this powerful communication medium has spread rapidly to interconnect our world and turned it into a true multi-way electronic village. The rapid geographic distribution of the Internet is having the same effect on our civilization as previous inventions that have dramatically expanded the geographic boundaries of our communication abilities, each making the world just a bit smaller. The Internet is the latest and most powerful such invention, with a current distribution to every corner of this planet, and already inevitably moving into space.

2. Robust Architecture: The Internet is the most robust communications network ever designed, able to adapt itself almost instantaneously to damage or outages to individual sections.

The Internet has no irreplaceable central control, administration, or authority. It can't be bought, hijacked, or monopolized. The loss of individual computers and networks does not affect its overall reliability. The Internet perfectly realizes its original intent it is actively robust, and cannot be completely deactivated without bringing down every single connection. The Internet is robust over time, too. Many people alive today were born before the Internet was invented. If we mark its birth from 1969, we can safely assume that it is now effectively immortal, and will continue to exist in some form for the rest of human history. Additional information about the robustness of the Internet can be found in the TCP/IP, packet switching and routing sections.

3. Near Light Speed: The Internet operates at near light speed, which on a planet the size of Earth often practically amounts to near real-time.

Digital information such as Internet packets travel at 2/3 of the speed of light on copper wire and on fiber optic cables. Since light speed is about 300,000 kilometers a second, this means digital communications travel at about 200,000 kilometers a second, slowing down only because copper and fiber optic materials are about one-third thicker than a vacuum. At this speed and neglecting switching

delays, two computers have to be more than ten thousand kilometers apart, or almost half way around the world, before they experience a tenth of a second in communications delay. With fixed near-optimal transmission speed, there are only two ways to make Internet networks faster increase the number of bits that are traveling at once down the connection, or increase the speed at which you switch them from one connection to another at the junction points. Internet routers are getting faster and faster with switching speeds nearing instantaneous, while fiber optics and wireless technologies are enabling networks to send much larger numbers of bits at once. The Internet is getting even faster.Toast.net provides services to test the speed of your own Internet connection.

4. Universal Access: The Internet provides universal access, giving the same powerful capabilities to everyone who has access to the network no matter where they are. The Internet is based on a common standard, the TCP/IP network protocol, which provides all computers with access to the network with the same technical interface and capabilities. This common foundation makes the entire internet technologies equally available to anyone connected to the Internet.

This architecture gives everyone the ability to make information like text, audio, and video accessible to a worldwide audience at an extremely low cost, since website storage space and lots of bandwidth can be rented from web hosting providers for low fees. Because the Internet has a "many-to-many" architecture, with everyone having the same capabilities as anyone else, it allows anyone to become a global publisher.

The earlier Citizens Band radio and Amateur Radio technologies provided a similar ability to share a common space across geographical distances. The Internet is the current such frontier. You should feel free to approach the Internet with a spirit of exploration, and don't need to have a task or a question to answer you can surf from link to link or try random searches just to see what turns up, like exploring a new city. If you feel moved to set up a website about your favorite hobby, go ahead. The Internet is universally empowering - everyone can participate.

5. Internet Growth Rates: The growth rate of the Internet exceeds that of any previous technology. Measured by users and bandwidth, Internet has been growing at a rapid rate since its conception, on a curve geometric and sometimes exponential.

Today, the Internet is growing exponentially in three different directions size, processing power, and software sophistication making it the fastest growing technology humankind has ever created:

- Size. The graphs in the historical statistics section show the exponential rate of growth in the number of people that use the Internet. Soon more than half the world's population will have access to the Internet.

- Power. As first appreciated at the Dartmouth AI Conference in 1956, computer processors and storage continue to double in power and capacity about every 18 months, providing steadily more powerful computers for use by increasing sophisticated software.

- Functionality. Software applications from routing programs to browser applications continually build on previous technology to become more sophisticated with every release, continuously evolving to incorporate new features and capabilities.

6. The Digital Advantage: Digital communications have the D4 advantage "Digital data doesn't degrade".

Analog systems and digital systems are like mirror images of each other. Analog systems are usually controlled by physical mechanisms that can be in an infinite number of continuous positions. A typical example would be the bicycle, which provides force to the wheels through the gear system depending on the continuously varying force of your feet on the pedals. An example from the 20th century would be one of those old record players that recorded music with the depth and pattern of a tiny groove cut into a vinyl disk by a diamond needle. In contrast to approximate, analog systems, the Internet is a digital medium based on data made up of discrete 1's and 0's. A bit of computer data is not infinitely adjustable, and only has one of two unambiguous states -- it is either a 1, or a 0. This limitation has a very important compensating advantage: there is no "drift" that can introduce error.

For example, for many years radio stations that broadcast on the AM frequency had a lot of static because their signal was based on an analog measurement of radio waves that were distorted in transmission. However, FM radio stations used a different method based on the phase of the radio wave frequency, which was a digital measurement with only one of a small number of different values, and therefore provided static free sound that wasn't distorted in transmission. On the other hand, once you go far enough away, and the FM receiver started having

trouble decoding the weakening signal, then the station would often just drop out altogether.

The Internet, like all computer systems, is based on digital data, so that information never changes or becomes distorted over time or in transmission between sites. This is the key feature that makes it possible to construct the very complex software systems that run the Internet, so that a website doesn't age and become fuzzy or garbled over time, and the characters in an email don't get transposed or mixed up when they are sent over long distances. One of the most important strengths of the Internet is that it's based on one of the simplest concepts digital 1's and 0's.

7. Freedom of Speech: Information wants to be free, and the Internet fosters freedom of speech on a global scale.

The Internet is a common area, a public space like any village square, except that it is the largest common area that has ever existed. Anything that anybody wishes to say can be heard by anyone else with access to the Internet and this world-wide community is as large and diverse as humanity itself. Therefore, from a practical point of view, no one community's standards can govern the type of speech permissible on the Internet. In the words of John Barlow, a founding member of the Electronic Frontier Foundation (EFF) "In Cyberspace, the First Amendment is a local ordinance". The principle of freedom of speech is also embedded in the Internet's robust architecture. In the words of John Gilmore, another founding member of the EFF "The Net interprets censorship as damage, and routes around it." Because of the Internet's robust design, it is impossible to completely block access to information except in very limited and controlled circumstances, such as when blocking access to a specific site from a home computer, or when using a firewall to block certain sites from employees on a workplace network.

ADVANTAGES AND DISADVANTAGES OF INTERNET:

ADVANTAGES

- Sharing information
- Communication
- Entertainment
- Advertisement
- News
- Customer support and service
- Feedback from users
- Collection of information

DISADVANTAGES

- Viruses
- Theft of personal information
- Immorality
- Wastage of times
- Pornography
- Spamming
- Language problems

IMPORTANCE OF INTERNET: