

Cyber Quiz 1: The Internet

by Dr D. C. Misra



TechRepublic member, Dr. D. C. Misra, has created this quiz as part of a series. He is an Independent eGov and IT Consultant based in New Delhi, India. He moderates the Cyber Quiz group (<http://in.groups.yahoo.com/group/cyberquiz/>) and maintains a blog on Cyber Quizzes (<http://cyberquiz.blogspot.com/>).

About the quiz, Dr. Misra says:

The Internet stunned the world and literally took it by storm when it was made public in 1992, and rightly so. Never before in human history had a technology of such revolutionary possibilities become accessible to the general public. The world suddenly shrunk to a network of networks connecting individuals and machines across nations.

While reasonable care has been taken to compile the quiz, neither the author nor the publisher is responsible for the accuracy, inclusion, exclusion or the interpretation of the contents. Readers are advised to consult authoritative sources before acting on the information contained here. The purpose of the quiz is educational and popularization of information and communication technologies.

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Cyber Quiz 1: The Internet

1. What is the Internet and who invented it?
2. (a) Who have been named as the four "fathers of Internet" and how were they so recognized, and
(b) When and how was the term "Internet" formally defined?
3. (a) What is Internet-2, and
(b) If it calls itself WIDE Internet, what is it?
4. If the Abilene network supports the development of applications such as virtual laboratories, digital libraries, distance education, and tele-immersion, what is it and after what is it named?
5. Jason Pontin talks of six Internets. What are they?
6. (a) Who anticipated the vision of a network, which could connect machines and people worldwide and when, and
(b) In the wake of the Cold War, the U.S. Department of Defense decided to set up a communication network without a hub so that it was not vulnerable to any nuclear attack. It was a precursor to the Internet. What was its name?
7. An historian of technology, Thomas P. Hughes, in his book *Rescuing Prometheus* describes four monumental projects that changed the modern world. Which project pertains to information technology (IT)?
8. It was a fundamental part of the supercomputing initiative started in 1986 in the U.S.; what is NSFNet and what role did it play in the birth of the Internet?
9. Much before the Internet came into being, some amateurs invented an international network for exchange of mail and files using the public telephone network. What was it called?
10. What is the rank of the Internet in the Top 20 Achievements of the Twentieth Century?
11. (a) What is an Internet host and what is the regional distribution of the Internet hosts;
(b) In 1990 there were only 400,000 Internet hosts worldwide connecting 22 countries—what was the number of

Internet hosts in 1999, and how many countries were connected; and

- (c) What was the number of Internet hosts in January 2004?
12. (a) What figure will Internet traffic per month shoot to in 2003 from 350,000 terabytes per month in 1999, and
(b) The number of devices connected to the Internet now is 750 million. What is the expected figure by 2010?
 13. In what four periods has the history of the Internet been divided?
 14. (a) What is balkanization of the Internet, and
(b) If there is an exploding universe of digital media devices based on the Internet, what was its estimated size in March 2004?
 15. What is immersive Internet?
 16. Forrester Research has called today's Internet "dumb, boring, and isolated" and has predicted that the World Wide Web will be replaced by X Internet. What then is X Internet?
 17. The Grid has been called the Internet's next bold phase. What is the Grid?
 18. If the United States leads in Internet, can Europe be far behind? No? Then what is Gèant?
 19. (a) If it is in Brazil and is concerned with McDonald's, world's leading food service retailer, what is McInternet;"
(b) If Web pages are ephemeral, frequently change, and often disappear, who launched the Wayback Machine and when, to access the archived Web pages, and
(c) Who founded the Internet Archive?
 20. (a) All of us surf the Internet but who claims to have coined the term "surfing the Internet;"
(b) If the world's first Internet café was named Café Cyberia, where and when was it opened; and
(c) Where is the highest Internet café going to be opened in March 2003?

Answer Key to Cyber Quiz 1: The Internet

1. The Internet is a global interconnected network of computer networks of more than 95,000 networks made available to the public worldwide in 1992. (Source: [A Brief History of the Internet](#), by Walt Howe). No one invented the Internet as such. The Internet came into being as a result of inventions and add-on contributions of probably up to 50 persons. There are many sites that offer Internet histories. I recommend [The Internet SOCIety \(ISOC\)](#) and [Hobbes' Internet Timeline v7.0](#).
2. (a) (1) Vinton C. Cerf and (2) Robert E. Kahn (for TCP / IP), (3) Lawrence G. Roberts for (ARPANet), and (4) Leonard Kleinrock (for packet switching). The four were recognized for their accomplishments when they received the [Charles Stark Draper Prize](#), which honors engineers whose accomplishments significantly impact society. They received the \$500,000 Prize on 20 February, 2001. The big four were selected from about 70 nominations by a group of 13 engineers. For details, visit the [National Academy of Engineering](#) Web site.
(b) On 24 October, 1995 by a unanimous resolution of the then U.S. [Federal Networking Council \(FNC\)](#).
3. (a) With the Internet having gone to the public domain, scientists and academicians have launched another Internet, the Internet-2, which is a collaboration project of 205 U.S. research universities working in association with top industry leaders and U.S. federal government agencies. It is supporting development of applications such as virtual laboratories, digital libraries, distance education, and tele-immersion. For details, visit the [Internet2](#) Web site.
(b) Widely Distributed Integrated Environment. It is a research consortium in Japan working on practical research and development of Internet-related technologies launched in 1988. It has collaborated with, among others, 133 companies and 11 universities to carry out research in a wide range of fields, and by operating M.ROOT-SERVERS.NET, one of the DNS root servers since 1997. For details, visit the [WIDE Project](#) Web site.
4. It is an Internet-2 high-performance backbone network in the U.S. that enables the development of advanced Internet applications and deployment of leading-edge network services to Internet-2 universities and research laboratories. The network has become the most advanced native IP backbone network available to universities participating in Internet-2. Announced on 14 April, 1998, the network was completed in 1999 with a backbone of 2.5 gigabits per second. It is undergoing an upgrade, expected to be completed by end of 2003, which includes 10 gigabits per second backbone and native IPv6 capabilities. It is named after a railhead established in Abilene, Kansas during the 1860's, which was then a frontier of the United States. The name thus indicates a foothold for exploration of future developments. For more information, see the portion of the Internet2 Web site about [Abilene](#).
5. Jason Pontin, editor-in-chief of business-magazine [Red Herring](#) talks of six Internets: (1) The Document-based Computing – the e-mail on the World Wide Web, (2) Cable Networks – interactive entertainment over PC as well as television, (3) Wireless Application Services, (4) Voice Over IP, (5) Machine-to-Machine Communication, based on XML, and (6) Ubiquitous Computing – like electricity, invisible and everywhere. (See [Abhrajit Gangopadhyay's interview with Jason Pontin](#), (March 16-31, 2000), Computers Today, New Delhi.

6. (a) [J.C.R. Licklider](#) (1915-1990). He proposed a “Galactic Network” of interconnected computers in 1962 and started a small organization in the Advanced Research Project Agency (ARPA) of the U.S. Department of Defense. (Source: [History of Computer Science](#), a personal view, S. Kirkpatrick)
(b) ARPANET (Advanced Research Projects Agency Network). ARPA is a U.S. Department of Defense agency.
7. ARPANET. Established in 1969, it culminated in 1972. (Source: Hughes, Thomas P. (1998): Rescuing Prometheus, New York, Vintage Books, Chapter VI, pp 250-300, <http://www.vintagebooks.com>).
8. ARPANET was replaced by [NSFNet](#), a network of the U.S. National Science Foundation (NSF) which made it available to the public worldwide as the Internet in 1992 and acquired a very high speed Backbone Network Service (vBNS) for itself. By the end of 1994, it was transmitting 17.8 trillion bytes per month.
9. [Fidonet](#). It was born in June 1984 when Tom Jennings (Fido #1 in San Francisco) sent a trial message to his friend John Madil (Fido #2 in Baltimore). Fidonet consists of about 30,000 systems (in early 1999, down from 38,000 in 1996 due to advent and easy accessibility of Internet) worldwide grouped into six geographical zones. It is an amateur electronic mail system. As such its participants and operators are unpaid volunteers.
10. Thirteenth. The top 20 achievements of the twentieth century are: (1) Electrification, (2) Automobile, (3) Airplane, (4) Water Supply and Distribution, (5) Electronics, 6. Radio and Television, (7) Agriculture Mechanization, (8) Computers, (9) Telephone, (10) Air Conditioning and Refrigeration, (11) Highways, (12) Spacecraft, (13) Internet, (14) Imaging, (15) Household Appliances, (16) Health Technologies, (17) Petroleum and Petro-Chemical Technologies, (18) Laser and Fibre Optics (19) Nuclear Technologies, and (20) High-performance materials. (Source: [U.S. National Academy of Engineering](#)).
11. (a) An Internet host is any computer connected to the Internet.
(b) It shot up to 56 million connecting 226 countries. Canada and the U.S. have the dominant share in Internet hosts of 65.3 percent while Europe has 22.4 percent share, and Australia, Japan, New Zealand another 6.4 per cent. The developing Asia-Pacific region has a share of only 3.7 per cent, and (c) 233,101,481. (Source: Internet Domain Survey, January 2004, [Internet Systems Consortium \(ISC\)](#))
12. (a) 16 million (Source: [Ryan Hankin Kent](#))
(b) 14 billion, according to Forrester Research. (Source: [Engine of Growth](#), by George F. Colony, Newsweek, March 15, 2004).
13. I. Pre-Arpanet Age (1866-1968), II. The Arpanet Age (1969-1981), III. The Internet Age (1982-1992), and IV. The Web Age (1993-). The ongoing Internet revolution, according to George F. Colony, CEO of Forrester Research, can be thought of in two phases: Phase I (1994-2004) Every company is connected to every customer, and Phase II (2004-2014?) Every company gets connected to every product it has ever made. (Source: [Newsweek](#), March 15, 2004).
14. (a) Balkanization is breaking up of a region into smaller and often hostile units. The Internet is getting broken into smaller units created by, for example, Gnutella, Napster, America Online (AOL), etc., which are small, defined spaces where everybody knows your URL. "It's not good; it's not bad. It's just so," says Steve Fox, Editor, CNET

Online. (Source: [Who Rules the Net?](#))

(b) Current Digital Media Universe Estimate – 459,295,161; Active Digital Media Universe – 299,307,191.

(Source: Global Index, [Nielsen/NetRatings](#), New York) Note: The digital media devices include instant messaging, Web phones, media players, file-sharing services, and online games. Nielsen/NetRatings introduced this concept for the first time in 2002. For details, see: [Measuring an Exploding Media Universe](#), Joyce, Erin (2002).

15. Described as the Internet of the future, dawning in the next 10 to 15 years, it will be infused with the essential services of sight (computer-generated avatars will become realistic stand-ins for actual people), sound (surround-sound audio systems will emulate real-life noises), and touch (force-feedback technology will reveal the shape and texture of physical objects from across a computer network). The Internet will be liberated from computer monitors. Instead it will have ‘telecubicles’ - half real, half virtual - connecting two offices making them seem like one. (Source: Kaplan, Karen, LATWPSve (2001): The Times of India, New Delhi, India, February 17).
16. Executable Internet or X Internet for short, an idea advanced by the research firm [Forrester](#). According to George F. Colony, Chairman of the Board and CEO, Forrester, [the X Internet will replace the present World Wide Web](#). The X Internet, an executable-powered Internet like a two-way conversation, will (1) Ride Moore’s law – the wide availability of cheap, powerful, low real estate processing, (2) Leverage ever dear bandwidth – once the connection is made a small number of bits will be exchanged, unlike the Web where lots of pages are shuttled out to the client, and (3) X Internet will be far more peer-to-peer – unlike the server-centric Web. (Source: [My View: X Internet](#), by George F. Colony). When a user logs his computer onto the Internet, X Internet will load a program on the user’s computer and thus provide a great deal of interactivity, which in turn will provide richer and more compelling experience to the user. Forrester has also predicted another type of X Internet – the Extended Internet – the widespread adoption of real-world appliances like air conditioners or car tires that communicate with owners or manufacturers via the Internet. The Extended Internet will come with the inclusion of cheap sensors in thousands of everyday products, an era that will begin around 2005, Forrester predicts. (Source: [Meet the Future: the 'X Internet'](#), by Rebecca Sausner, Rebecca, NewsFactor Network, May25, 2001. Also see [Engine of Growth](#), by George F. Colony, Newsweek, March 15, 2004)
17. It is a network of computer networks proposed to be set up at [CERN](#), the European high-energy physics laboratory, for analyzing phenomenal amounts of data generated by it. The CERN will be connected to national hubs, which will be connected further to regional centers, finally connecting to individual university laboratories. The CERN has already created a virtual exabyte (one billion billion bytes) memory device.
18. Launched in Nice in November 2000, [Géant](#) is a new pan-European network serving more than 3,000 of Europe’s academic and research institutions operating in 32 countries with a budget of €200 million over the next four years, including a contribution of €80 million from the European Commission. Europe’s reply to Internet-2, it has initial target speed of 2.5 Gbps with a target of hundreds of Gbps in the next four years. The Géant network is managed by [DANTE](#) (Delivery of Advanced Network Technology to Europe). (Note: €= euro, the currency of 12 countries of the European Union).

19. (a) Internet access at McDonald's restaurants in Brazil. McDonald's Brazil, in partnership with Hewlett Packard Development Company, L.P. (HP), will provide Internet access to e-education, e-jobs, e-health, e-marketing and e-finance at over 50 McDonald's restaurants in Brazil, providing as many as six computers in each outlet. (Source: [e-inclusion, McInternet, Brazil](#)). [McDonald's](#) has more than 30,000 restaurants in 119 countries serving 47 million customers each day
- (b) Dr Brewster Kahle, the inventor of Wide Area Information Server (WAIS). The [Wayback Machine](#) was launched on 24 October 2001 at the Bancroft Library of the University of California at Berkeley. It is a free service for accessing and using archived versions of past Web pages dating back to 1996 and comprising over 10 billion Web pages in the Internet Archive.
- (c) Dr Brewster Kahle founded the Internet Archive in 1996. Claimed to be the 'largest known database in existence', it comprises 100 terabytes of data and is growing at a rate of 10 terabytes per month, (Source: Press Release: [Internet Archive Launches Wayback Machine](#), October 24, 2001). It has [petabox](#), a machine designed to store and process one petabyte (a million gigabytes) of information.)
20. (a) Jean Armour Polly in 1992 (Source: [Net Mom's Internet Safe House](#))
- (b) In Whitfield Street, London in September 1994 (Source: [Yahoo! Mail Internet Café Awards](#)., Accessed 10 June 2004). There are now 20,000 Internet cafes in 171 countries.
- (c) Khumbu glacier in Mount Everest region. Tsering Gyaltzen Sherpa, 32, grandson of Sherpa Tensing, will open the [café at the Khumbu glacier](#) at 5,300 meters to allow climbers to access the Web. The transmitter will be installed on a slope 300 meters higher than the camp. The money will go toward purchasing equipment for the Sagarmatha Pollution Control Committee, a team that annually clears Mount Everest of the rubbish that climbers leave behind. (Source: The Economic Times, New Delhi, 6 February, 2003, Thursday, p-7). Up to 50,000 trekkers pass through the Everest region every year. More than 1,200 people have climbed the mountain. (Source: [Net cafe for Everest base camp](#), CNN.com/World). The Internet café operated for six weeks. (Source: [High ambition for Himalayan internet](#), by Daniel Lak for BBC News.)

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