Actual Benefits of Connecting to the Internet

Dr.Anucha Pitaksanonkul
Director of Assumption University Center
for Systems Development (ACES)

1. Introduction

What are the benefits of the Internet ? This may be the first question a lot of people might ask when they are deciding to join the Internet. Since Internet, which has been widely used, especially in the industrialized countries, is still relatively new to our country. Not many people have realized the potentially huge benefits they would gain from the Internet. The Internet and its vast resources, including more than 30 million people is extremely helpful and offers a lot of advantages to businesses, educational institutions, government organizations, individuals, and all kinds of professionals. The benefits are ranging from personal communication using E-mail , searching for suitable universities for graduate studies, looking for a database software from Oracle™, retrieving a brand new games, getting vital economic information, looking for a job, discussing about why you strongly disagree with nuclear testing, or just finding a friend. You can actually do all of these and more on the Internet. This article will explain about the benefits and how you can make use of these immense resources.

2. World Wide Web (WWW)

Hypermedia on the Internet is a very powerful environment that many businesses can exploit for their potential customers. Beautiful graphics as well as interactive access are very appealing to anyone passing by. A large number of businesses have been using this environment on the Internet for their marketing, customer services, product information, and ordering. A case in point is jewelry. Thailand exported more than 50,000 million Baht of jewelry and accessories in 1993. The figure will be higher this year. And the forecast predicts that it is growing every year. Many Thai exporters are now looking to Internet as their alternatives to advertising through TV shopping networks. The Internet would give Thai exporters direct sales to their customers in the US, Europe, and Japan. This would result in higher profits with lower cost and more flexibility in advertising. Today, commercial activity on the Internet, especially the World Wide Web (WWW), is increasing practically every day. Messages about new Web's pages have increased to the point of exploding at the sites which hold this information.

There are several ways your business can benefit from the Internet. You can create a virtual store front by setting up a WWW or Gopher server, use an E-mail for business communication or transmission of low volume data, read and post news that can affect your business, or use File Transfer Protocol (FTP) to transfer a large amount of data.

2.1 Creating a Company Presence on the Internet

The most effective method is by establishing a WWW server. WWW allows the users to navigate the Internet without having to know, remember, or write down the lengthy and clumsy addresses and file names. WWW is based on hypertext linkages which allow the users to browse Internet information, following up on items of interest.

A first page of document or home page of your business on a WWW server must be created with the HyperText Markup Language (HTML) so that WWW browser such as Netscape or Mosaic can read it. Hypertext offers a way of reading from one page to another page by word links. A special word, which might be a word emphasized with blue color, in a document, has a link to another page of document or resource. When the user clicks at this marked word, there will be a jump to a related page which the user can easily follow.

2.2 Finding WWW Sites that You are Interested in

With so many companies on the Internet and WWW, you might wonder how can you find something of interest to you and your business. For example, if you are a software house developing software related to Visual Basic, you will be interested in finding find out as much information as you can about Visual Basic. There are many sites that keep useful information about Visual Basic. To search for these WWW sites, you can start at *http://www.yahoo.com/* which will show a blank text box. You can type in the word Visual Basic and start the search. When the search results are returned, you can click at the marked word to jump to the desired location.

2.3 Which is the Best WWW Browser ?

The September 1995 of PC Computing did an evaluation of InterAp,

Netscape, Quarterdeck Mosaic, and NCSA Mosaic and provided the results of these browsers. They tested each browser by connecting them by 28.8 Kbps modem to CompuServe and navigated to several Web sites, looking for specific information, and download some files. The weighting factors that they used to measure the browsers are Navigation = 30%, Bookmarks = 30%, Customization = 20%, and Downloading = 20%. For Navigation, each browser scored the same points, 3 stars out of possible 5 stars. InterAp scored best on Bookmarks with 4 stars while NCSA Mosaic had only 2.5 stars. Both Netscape and Quarterdeck Mosaic had 3.5 stars on Bookmarks. For Customization, InterAp, Netscape, and Quarterdeck Mosaic are equal with 3.5 stars. NCSA Mosaic is the last with 3 stars. InterAp also performed best on downloading with 4 stars. Netscape and Quarterdeck scored 3.5 stars in this category while NCSA Mosaic had 3 stars. The overall result indicates that InterAp, Netscape, and Quarterdeck Mosaic are among the best while NCSA Mosaic is in need of some improvements, especially housekeeping tasks.

2.4 Business and Commercial Sites

If you are looking for businesses in Thailand, there is an index of the Thai companies at http://www.randomc.com/~ thai. You also can find the major list of business at *http://tns-www.lcs.mit.edu* .

3. Usenet Newsgroups

In March 1992, when the military censored all radios, TVs, and newspapers, the Bangkok Post printed some blank pages in its paper to protest·the censorship. Most of the people in Thailand did not have a chance to read the real news. However, some Internet experts in Bangkok, who had access to the censored news, posted the news to Usenet in the newsgroup *soc.culture.thai.* As a result, people all over the world could read and realize what had happened in Bangkok. If you are a software house, it is very essential that you are connected to the Internet to read the latest news about all kinds of software development. People all over the world are reporting bugs of Windows 95 as well as other software in various newsgroups. At the same time some knowledgeable people who are reading this news might offer some suggestions to achieve the solutions.

Usenet is a worldwide community of discussions groups called newsgroups. It is similar to CB radio but uses words instead of voice. In the opinion of someone who lives in Bangkok, Usenet might be very similar to Jor Sor 100 where people can report traffic news. People in Bangkok reporting news to Jor Sor 100 are comparable to people on the Internet posting news to Usenet. It is an electronics bulletin board. People can post news on the board. Anyone can look at the news and maybe post an answer or ask another question. The Usenet is organized into approximately 4,000 groups. You read and post news at your site which distributes the posting to other sites.

Some of the group classifications are as follows:

comp	All computer related topics
misc	Things that do not fit elsewhere
news	Happenings around the Internet and Networks
rec	Recreation and hobbies
sci	Scientific related issues
soc	Social and culture issues
talk	Debate-oriented
alt	Alternatives
biz	Business and commercial

If you are interested in database software, you might want to look at the groups:

comp.databases
comp.databases.oracle
comp.databases.informix
comp.databases.ingres
comp.databases.sybase

which discusses anything relating to database software. The newest bug, some work around, or new product announcement are constantly posted. In addition, each group has a news call FAQ (Frequently Asked Questions). This news contains some basic and fundamental questions and answers about what have been discussed in the group. This is quite useful because you can find a lot of information in this news. Furthermore, it is posted regularly in about a month or a quarter.

4. File Transfer Protocol (FTP)

In 1991, when I was trying to compile a non-trivial C program on a 386 running DOS 5.0, I was disappointed because the executable was larger than 640K which could not fit the limit memory of DOS. An alternative is to find a version of UNIX for 386 with a good C compiler. At that time, there are several good versions of UNIX for for quite an expensive price. A friend told me to get Linux, which he said is as capable of commercial UNIX, for free. I got the 2 files of Linux, which includes a boot disk and a root file system from *tsx-11.mit.edu* by FTP. The program runs fine on Linux, which is now considered by a large number of people as a very good version of UNIX for free.

You can save yourself a lot of money by looking for free software or shareware before you actually buy the commercial software. Many free software or shareware can perform as well as or better than commercial versions. A lot of Visual Basic objects which are freeware or shareware that I have used, for example ftp objects, winsock objects, are quite good. These software can usually be obtained by ftp. Most often, you will read about it in some newsgroups and then download the software by ftp.

The CICA ftp site, *ftp.cica.indiana.edu,* has one of the best collections of Windows utilities in the world. You can spend hours or days sorting through the collection, which includes everything from utility programs and code samples to Windows games and Winsock network tools. One reason the CICA collection is so popular is that every directory has an INDEX file that lists all the files in the index's directory, and what the file is for, so you don't have to download every file to figure out whether you need it.

The *ftp.cica.indiana.edu* site is so busy that it often reaches the maximum number of anonymous users it will allow at one time, so don't be surprised if you can't log in anonymqusly. Fortunately, the CICA collection is "mirrored" by a number of ftp sites around the world, so if *ftp.cica.indiana.edu* is busy try logging into one of the mirror sites as follows.

archive.orst.edu	USA (Oregon)
gatekeeper.dec.com	USA (California)
ftp.cdrom.com	USA (California)
polecat.law.indiana.edu	USA (Indiana)
ftp.marcam.com	USA (New Hampshire)
alpha.cso.uiuc.edu	USA (Illinois)
monu6.cc.monqsh.edu.au	Australia
nic.funet.fi	Finland
ftp.uni-paderborn.de	Germany

Besides free software or shareware, there are a lot of other interesting files that you can ftp. For example, beautiful pictures, utilities, statistics, FAQs, and research papers. If you don't know where to begin, you might use the text search for the topics that you are interested in as described in Section 2.2. Once the search results are returned, you can use Netscape or other browsers to download the files.

5. Electronic Mail (E-mail)

The best free software for sending and receiving E-mail, in my opinion, is Eudora. It's easy to install and use. I got the file from CICA in February 1995 which was the EUDOR143.ZIP. When it was unzipped, it became EUDOR143.EXE. When EUDOR143.EXE is run, it generates WEUDORA.EXE which you can run under MS Windows.

6. Internet Traffic Report

When OCMRT, which is a government agency who is responsible for traffic management, would like to inform the public about traffic conditions in Bangkok, it looked to Internet as the tool for collecting traffic information as well as spreading this information. OCMRT in collaboration with Assumption University and traffic police have created an Internet traffic reporting system. At the present, the system is collecting traffic information at the traffic police center which is getting the information from 4 branches, North, South, Thonburi, and Tripeth as well as the closed circuit TV (CCTV) from 16 intersections. In the near future, a police traffic radio, Sor Wor Por 91, will be providing the information to the system too, via the Internet. Traffic

information is put into the system from various points by the Client Map Units (CMUs) which concurrently transmit this information to the Server Map Unit (SMU) at the traffic police center using client-server technology. This information is sent to an Internet gateway at Assumption University by a file transfer protocol (ftp) via a leased line. Therefore, anyone on the Internet and with proper authorization can look at the traffic information at *http://einstein.s-t.au.ac.th/*.

About the author

Dr. Anucha Pitaksanonkul
ABAC, Assumption University
Huamark, Bangkok 10240
Tel. 300-4543 ext. 3681, 3677 (work)
222-3724 (home)

1. EDUCATIONAL BACKGROUND

Ph.D., Computer Engineering, December 1989.
The Center for Advanced Computer Studies,
University of Southwestern Louisiana, Lafayette, Louisiana, USA.
B.E., Electrical Engineering, March 1981.
Chulalongkorn University, Bangkok, Thailand.

2. PROFESSIONAL EXPERIENCE

Director (June 1993 - Present), Assumption University Center for Systems Development, Bangkok, Thailand.

Responsible for software development projects and professional training related to computers. Also, managing Internet Network for Science & Technology Faculty as well as developing various Internet related software. Taught several graduate and undergraduate computer science and information technology courses.

Software Scientist (September 1989 - February 1993)
INTERGRAPH CORPORATION, Alabama, USA.

Designed and developed several software products for almost 4 years at INTERGRAPH CORP, Alabama, USA. The software products are in the areas of graphics, networking, database, and electronics design. Supervised two groups of software engineers for two products.

Involved in extensive research of electronics software products. Proposed new technology and performed enhancement activities for these products. Participated in company's exhibitions at several trade and technical conferences.

Established safety guidelines which helped enhancing the security of Intergraph Network as well as all software products which INTERGRAPH distributes worldwide.

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Research Assistant (January 1986 - May 1989)

The Center for Advanced Computer Studies, University of Southwestern Louisiana, Lafayette, Louisiana, USA.

Senior Software Engineer (June 1988 - July 1988)

INTERGRAPH CORPORATION, Alabama, USA.

Teaching & Research Assistant (August 1984 - December 1985)

The Center for Advanced Computer Studies, University of Southwestern Louisiana, Lafayette, Louisiana, USA.

5. RESEARCH GRANTS

5.1 *High Performance Router for Printed Circuit Board and VLSI Design*, Funded by NECTEC (220,000 Baht).

6. PUBLICATIONS

[1] A. Pitaksanonkul, et al., "Comparisons of Quad Trees and 4-D Trees: New Results," IEEE Transaction on Computer-Aided Design, vol. 8, pp. 1157-164, November 1989.

[2] A. Pitaksanonkul, et al., "Bisection Trees and Half-Quad Trees: Memory and Time Efficient Data Structures for VLSI Layout Editors," INTEGRATION the VLSI Journal 8 (1989), pp. 285-300.

[3] A. Pitaksanonkul and C. Lursinsap, " An Efficient Layer Assignment Algorithm for Gridless Switchbox Routing," Proc. Custom Integrated Circuits Conference, San Diego, May 1989, pp. 3.6.1-3.6.5.

[4] A. Pitaksanonkul, et al., DTR: A Defect-Tolerant Routing Algorithm," Proc. Design Automation Conference, Las Vegas, June 1989, pp. 795-798.

[5] A. Pitaksanonkul, et al., "Profit-Loss-Gain Algorithm for Data Path Synthesis," IFIP WG 10.5 Workshop on Logic and Architecture Synthesis, June 1990, pp. 39-45.

[6] A. Pitaksanonkul, et al., "Analytical Models for Sizing of VLSI Power/Ground Nets Under Electromigration, Inductive, and Resistive Constraints, " International Symposium on Circuits and Systems, June 1991, pp.2272-2275.

[7] A. Pitaksanonkul, Geometrical Analysis and Prediction in Silicon Compilation, Ph.D. Thesis, The Center for Advanced Computer Studies, University of Southwestern Louisiana, December 1989.

[8] A. Pitaksanonkul, Time and Memory Efficient Data Structures for VLSI Design Systems, M.S. Thesis, The Center for Advanced Computer Studies, University of Southwestern Louisiana, May 1987.

7. OTHER PUBLICATIONS

- Intergraph's confidential electronics specifications. - Technical Report No.88-3-7, CACS, University of Southwestern Louisiana, 1988.

- Several Thai articles in Micro-Computer Magazine, SE-Education, Thailand.

8. INVITED TALKS AND PRESENTATIONS

- Geometrical Analysis and Prediction in Silicon Compilation Tufts University, Medford, Massachusetts, USA.
- High Performance Channel Routing, University of Michigan, Dearborn, Michigan, USA.
- High Performance Channel Routing, Texas Tech University, Lubbock, Texas, USA.
- DTR: A Defect-Tolerant Routing Algorithm, Design Automation Conference, Las Vegas, Nevada, USA.

- An Efficient Layer Assignment Algorithm for Gridless Switchbox Routing, Custom Integrated Circuits Conference, San Diego, California, USA.
- Data Structures for VLSI Design Systems, Mentor Graphics, Portland, Oregon, USA.

9. OTHER ACTIVITIES

- Chaiman of the Subcommittee, Office the Prime Minister, for Internet Traffic Report.
- Taught part-time at Falculty of Engineering (English program), Thammasat University.