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The Exploding Internet and the Challenges of Using Internet as an Infrastructure for A Global Electronic MarketPlace

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The Exploding Internet

Internet is an unstoppable bandwagon. It is a global meeting place for people from diverse countries and cultures, languages and lifestyles, professions and pursuits, heights and weights. Pessimists can view this as another phenomenon that is dividing the haves and have nots into information rich and information poor societies, Optimists can view this as a panacea for people from all over the world to feel emancipated from societal customs, political pressures, governmental curbs, and religious taboos to truly become free. People from all walks of life can engage in communication on any possible topic on the world at electronic speeds in their search for information, knowledge, wisdom, TRUTH.

The numbers are simply defy logic or any past experience. In North America, from merely 500 host computers on the internet in 1983, we moved to 2.1 million in 1994, 4.5 million in 1995, 18.6 million in Spring, 1996, and 50.6 million in December, 1996. In western Europe, these numbers changed from 730,000 in 1994 to 1.4 million in 1995. Internet is growing faster than anything we have witnessed in the entire human history -- faster than PCs, faster than cellular phones, faster than fax machines. It is difficult to estimate the number of Internet users. However, according to best estimates, there were 28,000 users in 1987, 38 million in 1994, 56 million in 1995 worldwide. At this rate, Internet users outnumber the population of almost all but the largest nations. The number of users per host computer worldwide roughly approximates to ten. According to Electronics Now (13), there were 30 million active Internet users in USA in 1995 -- a number that is swelling by 160,000 each month. Within 18 months during 1995-96, users created more than 3 million multimedia pages of information, entertainment, and advertising.

In terms of scope, Internet keeps on expanding unabated -- from e-mail to newsgroups, to file transfer, to chat groups, to interest groups, to an instantaneous access to unlimited information about topics from A to Z. Scope must include the creative and cost effective ideas of Intranets and Extranets. Given its exponential growth in size and scope, internet is becoming a human necessity, much like the water we drink, the food we eat, and the air we breathe. According to 1997 Business Week poll (14), the cyberspace population is attracting people from all walks of life -- male or female, young or old, rich or poor, less educated or more educated, black or white. There are gaps alluding to a society getting divided into information haves and information have nots, but the gaps do not appear to be insurmountable.

E-Commerce: A New paradigm for Shopping

The United States government estimates that Internet commerce could total several billion dollars by the beginning of the next century (12). The economic upheaval caused by electronic commerce will be immense. Distribution systems must be re-engineered, transaction costs will diminish, and the need for people to process orders and see that orders are filled will be significantly diminished. Advertising and marketing will change drastically also, and also making purchases electronically. It is abundantly clear that Internet will never make it without e-commerce and vice versa. In today's global economy, which is obsessed with products, services, ever-shrinking life cycles for all phases, Internet-driven commerce is a great enabler, linking all parts of the value chain. E-commerce is still in its infancy, no one is making much money yet; for now the costs of maintaining a Web site make online businesses little more than a break-even proposition. Without ingenuity and a clever strategy, businesses can't stand out on the Web. Comparison shopping is merciless, because customers can check prices globally with a click of a mouse.

When Adam Smith described the concept of markets in the Wealth of Nations some two and a quarter centuries back in 1776, he theorized that , "if every buyer knew every seller's price, and if every seller knew what every buyer is willing to pay, everyone in the market would be able to make fully informed decisions and society's resources would be distributed efficiently (16). Internet with its WWW of networks and computers and databases, and friendly graphical user interfaces like Netscape Navigator and Internet Explorer, comes close to this ideal of instantaneous access to most current information by all at all times. Bill Gates truly believes, it will happen, when he says, "all goods of the world will be available for you to examine, compare, and even customize." (16) This will make the global MarketPlace very efficient. Prices will be very close to costs and there will exist many substitutes for a product.

Traditional versus Internet-based E-Commerce

The traditional e-commerce is conducted through a variety of technologies built on EDI value-added networks and messaging systems -- enterprise-wide messaging, bar coding, symbol technology, fax communication, and electronic documentation interchange. Unibex is a company that offers traditional e-commerce services by partnering with IBM, AT&T, Microsoft, the U.S. Chamber of Commerce, and Chase Manhattan Bank . It is creating a global e-commerce platform where multi-vendor systems can inter-operate. The services of Unibex include: virtual private networks (extranets), and EDI. The non-traditional, e-commerce is conducted exclusively on the burgeoning Internet which is less secure than EDI on private VANs.

Domestic versus Global E-Commerce

Domestic e-commerce and global e-commerce also need to be put in perspective. At present, we essentially have even domestic e-commerce in fragments. In USA, only 1% of cybercitizens frequently shop online, while 9% do sometimes -- but the good news is that of the 40 million online users, some 10 million have purchased something online (14). Does global e-commerce really exist? Can we complete a simple transaction e.g. advertise from America, receive order from India, ship the goods to India, send an invoice to India, receive payments from India, all using the infrastructure of the Internet?

Global Electronic Commerce

The US government has defined a framework for global e-commerce. It is presently trying to engage other countries and world bodies in laying down this framework which is based on 5 guiding principles & 3 major issues. (12)

Principle-1: The private sector should lead in the development and evolution of Internet-based e-commerce. Any government intervention would impede e-commerce development.

Principle-2: Government should avoid any undue restrictions on global e-commerce. These include taxation, tariffs, and new regulations.

Principle-3: The government involvement must be limited to support and enforce simple and consistent legal environments.

Principle-4: All stakeholders should recognize and encourage the unique qualities of the Internet -- its bottom-up governance and decentralized nature.

Principle-5: E-commerce should be facilitated on an international basis. The Internet should be governed by one set of rules regardless of country.

Issue-1: Financial Issues include customs, taxation, and electronic payment systems.

Issue-2: Legal Issues include uniform commercial code for Internet, intellectual property protection, and security concerns.

Issue-3: Market Access issues include content, technical standards, TC infrastructure, and inter-operability.

Marketing Research on the Internet

Internet is very efficient for marketing research. Almost current data is available on: a) number of hits on a web site during a given time period, b) average time spent per hit on a web site, c) kind of questions sent via e-mail, d) kind of questions asked during online chats, and so on. Contents and format of a web site can be frequently modified based on this data.

Marketing and Advertising on the Internet:

It is not enough to put up a home page on the WWW and expect that surfers will miraculously take a peek at your page. Links from several other web pages are important. Within the web page, the format and design must be attractive to keep the surfers interested. The contents should be based on an overall strategy: read product information and encourage reader to visit the nearest store; read product information and order over a 1-800 number; read product information and order directly over the web; read product information, order, and provide credit card information for payment purposes directly over the web; and so on (1). Some web sites might provide for online chats with experts. This can heighten the image of companies, and improve their brand identification. While participating in these discussion groups, one must exercise caution that a company representative does not constantly "hawk" the company's wares (3). Miller Brewing Company offers a virtual tap room, which is updated monthly, carries unusual regional news stories and information about Miller sponsored sports events, and is utilized to exchange e-mail with the brewer. Reebok offers striking graphics and interviews with athletes at its site. Ragu, the spaghetti sauce marketed by Van den Berg, has a web site that attracts as many women as men, unusual since a typical web user is usually a male (2). Some Internet providers such as Pointcast offer companies the ability to customize advertising based on preferences. Thirty three percent of all American households own a PC, 12% of those subscribe to online services. Among these on line users, 50% have incomes in excess of \$65K per year, and 76% have college education. This is an ideal group for advertisers to try to reach.

Etiquettes on the Internet: Since there is zero governance for internet, breaches of unwritten etiquette can result in instantaneous flames. For example, when a Phoenix Law Firm sent a blanket message to everyone advertising green card services for aliens, the firm was inundated with irate messages within a few hours, effectively taking the company off-line since the messages take time to download to the office computer (3). Like the junk postal mail, such messages are junk e-mails where unlike the postal junk mail, recipients can take instant action.

New Rules of Advertising: According to a study of the University of Minnesota (Business Week, 15), if a site does not capture Web surfer's interest within 8 seconds, they're gone -- off to another one with a click of the computer mouse. Even if they stay, the average visit is only seven minutes. That leaves precious little time for the Web publishers, and promote or sell anything. Adding a way for Web surfers to chat consistently boosts traffic on that web site by as much as 50%. Chat visitors hang around a half-hour, three times the average -- a big lure to advertisers. A new study by Yankelovich Partners Inc., a marketing research firm, found 63% of people online say they won't buy anything over the web until there's human interaction involved (15). Agriculture online site @gricuture launched two years ago by Meredith Corp. exemplifies the above finding. This site offers the latest farm news, Global Positioning Satellite data, commodity prices, and bulletin boards galore, electronic coffee shop (15). This site has mushroomed from 83000 hits in August 1995 to 5 million hits in April, 1997. "Interactivity is the linchpin of this whole thing," says @gricuture Online editor John Walter.

Coupons on the Internet: Coupons have long been an effective way for promoting one's products. These can also be used to track the effectiveness of a particular advertising medium (newspaper, magazine etc.).

Recent advances in information technology, such as bar code readers, make it easier to process coupons. The trend toward coupons has been increasing -- more than 310 billion coupons were distributed in the U.S.A. in 1994 and the majority of these (82.3%) were delivered through free standing inserts (4).

How can coupons be generated from the internet? One, print them on the home printer. To control printing of multiple copies of a coupon, Coupons Online lets consumers print a coupon only once. Still, abuse by photocopying cannot be eliminated. Two, mail the coupon to those requesting over the internet. This causes delays but avoids any problems of the first option. (4) Coupons Online offers a weekly selection of coupons from several categories of marketers. A consumer answers several demographic questions at the time of signing on first time. This enables marketers to build consumer databases and tailor coupons to individual needs. A new competitor for Coupons Online is CouponNet.

After Sales Support on the Internet

The customer support is easily done through the net. The company can easily post technical support information for their products and services, as well as correspond with customers through e-mail, or facilitate online chat with a group of customers.

Benefits from E-Commerce

Time Savings: in procurement, product development, market research, and product presentations, advertisements.

Reduce errors: in procurement, trading, billing.

Reduce costs: in procurement, product development, market research, trading, billing, advertisements.

Others: Leaner and more competitive economy, create new services and businesses, empower small businesses into accessing worldwide markets.

Issues and Concerns of E-Commerce and references are available on request directly form the author in the full version of this paper