

## ***OldCoder Internet History***

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### **Introduction**

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Explanation: I received these questions from a friend who was writing on behalf of a High School student that he knew:

- A. How broadly was any of the research that ARPA and related organizations did publicized to the general public via radio, television, and other media?
- B. Do you view the Internet as positive or negative overall (and why) ?
- C. Did you have any personal experience with Mosaic or other browsers in the early 1990s? If so, what were your thoughts?
- D. In what ways did the early Internet begin changing your daily routines?
- E. What do you consider to be the most significant event or idea that made the Internet into what it is today?
- F. Do you feel that people have more or less freedom because of the Internet?
- G. Additional comments?

The request was for one or two sentences for each point. However, I won't answer that way. Instead, I'll try to cover the points involved as part of a broad picture.

The story isn't remarkable. But it may be interesting because it's what I observed personally.

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## **Questions A, C, and D.**

When I was a boy in the 1960s and 1970s, nobody that I knew had heard of the Internet.

It would have been surprising if we had heard of it. At the time, we didn't even have computers. The early Internet existed, but there was no Web. The frameworks that were present didn't intersect ordinary lives. Certainly not the lives of kids.

As a kid, I wouldn't have known an ARPA from an apricot. I wanted access to computers of some type, though. I found it at a university located about ten miles from my house in Walnut Creek, California. The university was U.C. Berkeley.

I wasn't old enough to drive a car. However, a train station was built in my city circa the early 1970s. This was great. Until the train was added, kids were more or less trapped in Walnut Creek. Without a car, it wasn't easy to get to the next town. After the train came in, though, we were free to check out the area.

I chose to go to the university. I didn't go every day. However, sometimes I'd walk from school to the train station, get on the train, and be transported to another universe. A world that was quiet, that had stacks of books, and that even had computers.

The computers were among the first public access systems in the country. They weren't free. You had to pay to use them. But the cost was reasonable.

The terminals were tele-typewriters. Probably Model ASR-33s. People could use them to type and run BASIC programs. So we learned BASIC.

I say “we” because others went sometimes. Once or twice in some cases. More in others. This included Twisted Time, later an IEEE member and mathematician. Probably our associate Kevin King as well; he became an IT lead at Chevron.

Akhil Amar went at least once, but he was too busy with other activities to spend much time there. He teaches Law at Yale University these days. Kern King, Kevin's little brother, may have tagged along with Kevin. He's a Finance Director at Stanford University now. Roger Ceragioli, an astronomer now, visited a few times as well.

The terminals weren't connected to the Internet. The idea of one of them talking to another in a different city would have seemed odd to me.

But things evolved. I got to know people who hung around the same place. Some of them had email. We just called it mail. So I learned about electronic messages. This was the first step that I took towards the Internet.

After High School I attended the same university; U.C. Berkeley. I started to use UNIX systems. These had standard mail software. I joined mailing lists using that.

Mailing lists were the next incremental change for me. They were the closest thing we had to online forums. Lists connected institutions to institutions. I don't remember much talk about the general public in this context.

People were the same then as now. There were fights in forums. But since people usually knew who people were, they saw each other as human. And posters usually weren't anonymous. This helped to keep things in check. Fights were more controlled.

Here's a poem that I remember from a list. One person attacked another. In this case it was probably a joke:

Peter in the springtime  
Peter in the winter  
Peter in the fall  
Peter plunging down and down  
Peter in the fall

“Peter” was Peter da Silva. He's well-known in some circles. He and I once wrote an adventure game together in Lisp. He married a woman who I believe evolved into a major Usenet figure.

Peter had a sense of humor. I looked him up just now. Here's what one of his web pages says. The mailing list that's mentioned here is one of the lists that I hung out on in the 1970s:

*Peter da Silva is a simulation running loose on the net. It was programmed largely by a rogue group of users in the late '70s and the early '80s, members of the notorious Chaos Mailing List that spread over the ARPAnet at that time. The simulation has come to believe that it's real, but don't let it fool you... it's nothing more than a collection of canned responses.*

After mailing lists, Usenet came along. The next major step. Usenet was like a collection of mailing lists that anybody could view. A simple concept. But still a leap forward in organized communication.

Finger and Gopher sites started to increase in number after that. They weren't the Web as you know it. But by 30 years ago or so, it wasn't unusual to be able to type at a computer and read information stored hundreds or thousands of miles away.

Or even to make something happen. For example, you could ask a cola machine located in a different state to tell you if it had cola in stock and even if the cola was cold.

All of this affected me only incrementally. I became accustomed over time to the notion of electronic mail, online discussion, remote data storage, and remote operations.

I was a software professional by the early 1980s but I don't remember using the Internet much at the time. My CEO was suspicious of newer technologies. If a letter needed to be sent immediately, I think that we mostly used faxes.

I started to read about hypertext during this period, though, and I considered creating my own hypertext system. I didn't follow through. Regrettable.

Then came NCSA Mosaic. This was the web browser that sparked the modern Web.

Mosaic wasn't the first web browser. In fact, Gopher clients, which were like text mode web browsers, had been around for years. But Mosaic was the one that caught on.

This was probably due to technical innovations such as bookmarks and inline images. Inline images were especially nice. When we ran the program and typed in a web address, both text and pictures would appear together. Slowly, because this was the era of dialup. But it was like having live newspapers that could appear anywhere, present anything, and be updated at any time.

The effect was startling at first.

Many businesses were on the ball. They realized immediately — long before the dot-com era — that something significant had arrived.

This was a new medium that could replace books, magazines, newspapers, advertising circulars — anything in print — and update things in real time.

There was a land rush for Web domains early on. One consumer products firm went so far as to register domains for every skin condition or problem that one might think of.

The number of websites, commercial and personal, started to grow exponentially. But some companies — for example, mine — were confused about what this new thing was. I remember my CEO asking me “Where do I log in?” He imagined the Web as being some type of large BBS (Bulletin Board System). A closed environment that belonged to a single entity. But it was open, and that was a crucial point.

One Internet problem that I had to deal throughout the 1990s was bandwidth. My CEO was cost-conscious. So the entire company shared a single 9600 baud modem for a while. I had a firm of about 20 people on a single 9600 baud line. That one line had to carry email, web browsing, FTP downloads, everything for the entire company.

The topper was that my little brother, Ken, asked me to put some of his company's traffic on the same 9600 baud line. I rarely refused Ken anything, but I had to say no to that. As a footnote, it's my understanding that Ken was later the lead developer on the Amazon Kindle project.

Around the middle of the 1990s, I purchased a book for my CEO about the Internet. I told him that we needed to shift our business models to include it. He didn't listen to me. I found the book lying on the floor one day and took it back. The company was dead a few years later.

That story, the story of my company's death, is ironic. We leased space in our building to other firms. If I remember correctly, Bob Rieger's Internet company Netcom was one of our tenants for a while. I inherited their first machine, Netcom-1, and used it as a network server. Netcom subsequently became MindSpring and EarthLink. Rieger ended up wealthy. My firm did many interesting things but it didn't change with the times. So, in the Internet age it is less than dust. Nobody remembers the dead company today.

### **Question E.**

The Web, as in a decentralized hypertext framework, is arguably the most important development in the history of the Internet from the perspective of significant changes to society.

### **Question F.**

People have more freedom today, in general, than they would have had if the Internet, and the Web in

particular, had not come along.

### **Questions B and G.**

It's easy to think of problems related to the Internet. But the positives outweigh the negatives. Most importantly, in the decades to come, the Internet will play an important role in preserving whatever freedom remains in a number of countries around the world.

Additionally, the Internet has facilitated the growth of the Open Source movement, a movement that is likely to transform parts of society for the better.

To sum things up: The Internet has made it possible not only for anybody to be heard, through the Web, but for people to build associations, projects, and communities with others around the world with ease. It's one of the most important changes that's happened in society over the past half century.

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