



Internet Computing Begins

Charles Petrie

In early 1996, I was approached by Ted Lewis with the idea of starting a new IEEE Computer Society magazine about “the Internet.” You might need some context to appreciate what happened when I accepted the challenge to understand why it was one.

Getting in Gear

Many of us academics and researchers had been using the Internet regularly since the Eighties. We emailed each other and wondered why everyone didn’t. Email was the Internet’s first killer app (versus telnet), but finding the information available to share via FTP was the new pressing need.

Up until 1992, Gopher looked like the best solution. Then we saw the WWW and knew this was a winner. I went to Stanford in 1993 to the Center for Design Research (CDR) and had everyone throw away paper and put everything on “the Web” using Mosaic. Back then, you only had to know 10 simple HTML commands to write a webpage. Everyone in the CDR could do it. I started putting all of my slide presentations in HTML, packed a Sun Sparc in my luggage, and gave a DARPA presentation from its webserver that year. We started the Mechanical Engineering section of the WWW Virtual Library (<http://vlib.org>), the predecessor of Wikipedia, shortly thereafter. Netscape Navigator 1.1 became available and the Internet went commercial in 1995. Students were bringing news of Java to seminars, and quitting their PhD programs in droves to start ISPs. Heady days.

Except over at Microsoft. In 1996, Bill Gates was still dismissing the Internet and WWW in *The Road Ahead* as inadequate technology to build a mass market.¹ Other professional analysts were predicting that the Internet would never affect magazines and newspapers or brick-and-mortar stores. That was the received wisdom outside our nerd bubble when we started working hard on this magazine, with our first board meeting in the third quarter of 1996.

The First CS Magazine Online

It wasn’t obvious to everyone at IEEE Computer Society what we were trying to do or why, because the Internet wasn’t generally well-understood. There were prominent naysayers both inside and outside the Computer Society. Most people were reluctant to put their credit cards online. Web-servers were still counted carefully. Bob Metcalfe was saying the whole Internet would crash. Technical gurus predicted packet switching would be replaced by Asynchronous Transfer Mode (ATM; see https://en.wikipedia.org/wiki/Asynchronous_Transfer_Mode). Interactive TV was being pushed. The Computer Society’s press office director wanted this magazine to be called *Edgeware*. We had to fight hard for approvals and resources.

Magazines mostly weren’t on the Web then. It was big news when *Salon* offered its content online in 1995. IEEE had no digital library, so I worked closely with the Computer Society’s IT department. I converted all of the magazine’s content by hand into HTML and posted it on the Computer Society’s server. So we were the first Computer Society magazine online. You can still see my original 1997–1998 columns (<http://www-cdr.stanford.edu/~petrie/online/>), as well as my interviews with leading innovators, including Bob Metcalfe, Eric Schmidt, Len Kleinrock, Robert Cailliau, and George Gilder (www.computer.org/portal/web/computingnow/internetcomputing/interviews). All of this was, I repeat, hand-coded into HTML along with all other magazine content, and available for free. It was difficult, but I wasn’t going to start a magazine called *Internet Computing* that wasn’t available online.

One-Way Publishing versus Interaction

At some point in these early years, the Computer Society decided to start their digital library, without consulting any of us on the

magazine's editorial board. One day I woke up to find that the *IC* URL had been changed to point to the digital library (for sale) instead of my hand-coded output. I complained and the state of the world was at that point that no one understood the value of cyber real estate; the response was "it's just a URL." But that's how we got to where we are today, with most of the content paywalled and difficult to obtain in print.

This was what I feared in my first column in January 1997.² Even more, I feared that the WWW would be a one-way publishing medium, as did Tim Berners-Lee. Overall, the WWW has evolved to be the two-way medium that Berners-Lee desired, but not IEEE Xplore.

We've always wanted letters to the editor. My column, "Peering" is intended to be provocative, and to generate responses. But IEEE hasn't taken advantage of the 21st century Web to allow readers to interact with us. This might be one reason the readership of this magazine has declined.

Another might be that there's simply less general interest in the technical aspects of the Internet today. As I wrote in my first column in 1997, "And it's likely that in the near future, it will go the way of electric motors and microprocessors: so embedded in our

lives that we won't notice it anymore."² We may have arrived. It's been a long, strange trip. People now think being a computer nerd means understanding the various user interfaces to high-level applications.

Some of this early story I documented in my last column as Editor-in-Chief,³ much of which is still relevant, and other parts mentioned here are new.

Also new is that this magazine has lasted 20 years! And the various EICs and members of the editorial board have not only kept it alive but thriving, with quality content the whole time. The readership for this kind of content might have diminished, but the magazine remains relevant for anyone who wants to know how the Internet actually works and to understand current and near-future technologies. Kudos to all of the volunteers who came after me for making this magazine one of the initiatives I'm most proud of taking in my professional life. Their contributions have made all of the obstacles overcome in the early days a worthwhile achievement. Thank you. ☐

References

1. T. Townsend, "What Bill Gates Got Wrong About the Internet in the 1990s," *Inc.*, 1 July

2016; www.inc.com/tess-townsend/what-bill-gates-got-wrong-about-the-internet-in-the-1990s.html.

2. C. Petrie, "The New Engineering Computer," *IEEE Internet Computing*, vol. 1, no. 1, 1997, pp. 4-5; <http://www-cdr.stanford.edu/~petrie/online/v2i6-webword.html>
3. C. Petrie, "A Brief History," *IEEE Internet Computing*, vol. 2, no. 6, 1998, pp. 6-7; <http://www-cdr.stanford.edu/~petrie/online/v2i6-webword.html>

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