

■ KENNETH E. KENDALL, Feature Editor, School of Business-Camden, Rutgers University

In the mid-1990s, the almost two-decade old Internet underwent a dramatic change with the creation and promotion of the World Wide Web (basically a set of linked hypertext documents accessed via the Internet). Prior to that time, many of us used the Internet to send email in one form or another. Today, the terms World Wide Web and Internet are used interchangeably, but that was not always the case. My first “home page” appeared in February 1995 when I created some text, scanned five photos, added four sounds, and created some external links, but I am not quite sure how many visitors I had to my website other than my students. This month’s column is written by a WWW pioneer who created a website design firm. He shares with us his experiences and thoughts about the past and future of the Web.

[Kenneth E. Kendall, Feature Editor]

Browsers, Businesses, and Bandwidth: A Personal Journey down the Information Highway from the Beginnings of the World Wide Web to the Present

by Michael Mahfood, Managing Partner of Group M7

I called myself a graphic designer in the early 1990s, and it appears that by today’s standards that moniker was quite a stretch. Back then, I was happy creating print advertising, sales flyers, and catalogs for my clients in the electronics industry. I was using software called Aldus (later Adobe®) PageMaker on a 9” ZEOS black and white notebook computer and thought: “All things considered, this was a cutting edge industry and I was cutting edge!”

We could not know where this would lead. We were, after all, using small compact computers for a living, looking very good doing so, and making a living as an added advantage!

The Early Days of the Web

So as stories go, one day in 1994, I was just minding my own business and a client in the Chicago area that was publishing *Barbie—The Mattel Barbie Magazine* asked me if I had heard of the World Wide Web yet. She said you could place an ad-type page there and potential clients would see it and maybe contact you. It was cheap and best of all, could be seen all over the country. I queried

her further. While her question caught me off guard, I didn’t want to appear uninformed, so I just let her keep talking and tried to follow along. With hindsight, I now realize that she was talking about what we today take for granted, what today we now know as the single greatest informational tool since the printing press.

In the early days of the Web, some of us really didn’t know whether the word or term was supposed to be *website* or *websight*. Both made sense, you saw it with your eyes, and it just did not naturally occur to me what was right. This prompted one of my earlier clients to say, “You know, Mahfood, two years ago you couldn’t even spell Internet, and now you are in the business.”

I quickly plunged headlong into the occupation of Web mastering. I was uniquely qualified, I told myself. After all, I had a computer, I knew how to use it, and my entire life before this point had taught me entrepreneurial skills by trial and error. Timing is everything, and time waits for no man.

In 1995 it was a matter of being in the Web business with a few websites to your credit to attract new business. After all, it



Michael Mahfood is the managing partner of Group M7, Inc., one of the oldest website design firms in the country. He resides in Tyler, Texas, with his wife of 40 years, Suzann. They have five children and

10 grandchildren.

www.groupm7.com

seemed that most of the website designers were appropriately called that, until their mother called them to supper, and then it was homework and bedtime! Not the stiffest competition I have ever faced. In fact it was simple to attract new business. One customer got us another and so on.

We opened our website design firm in 1995 and called it Group M7. Our first semi-automated HTML language editor was a German product named HotDog. It was as primitive as they come by today's standards, but in 1994, not having to code HTML with a note pad was a real advantage. There was a tradeoff to be worked however. Even though there were not many websites, there was not much bandwidth either.

In the beginning of the browser-based Web those of us designing websites were forced to use bandwidth conservation techniques. We used small, condensed images; we rarely used backgrounds that were not generated by the viewer's computer; and we made every effort not to make the simple databases we employed too "heavy" to download with dial-up modem. Who of us has not been lulled to sleep to the sounds of two modems trying to mate over and over again . . . to no avail? But I digress. We did all this because the popularity of the Web was developing faster than the telecommunications industry could gear up their infrastructure. It was a bottleneck that was to last five long (and slow) years.

As in all good free market-based societies where there is demand, supply follows. Consider this: it took 38 years for AM radio to be in 50 million homes, and it took 13 years for 50 million of us to be eating our dinners in front of a black and white TV. But it only took 5 years for the browser-based Internet to be in 50 million U.S. homes, and that was in 1998 (Morgan Stanley report, 1997).

Creating Successful Online Businesses

The earlier client I mentioned, a kind and generous man named Michael Raley, owner of one of the oldest websites (built in 1994), is still on the Web today. His site www.racescanners.com allowed fans of

NASCAR and other racing franchises to locate particular radio frequencies and thus be able to listen to the conversation between the driver and his crew on their portable scanners. If the team decided to change the frequency they transmitted on, then racescanners.com would alert their clients through online and paper-based publications. It was sheer genius and a perfect application of the use of the Web. Mr. Raley did not stop there, he actually created a cottage industry by selling, via his on-line store, affinity products that race fans craved, and would be exposed to, every time they consulted his website for the newest frequencies. Sixteen years later Mr. Raley and I are still together, and both of us are happier for it.

Now looking back, it was obvious that there would be a rush to the Web. *The Web was not a magic pill for instant success in business.* The application would be the deciding factor. Some applications on the Web would work well, while others would not. It would resemble in some cases forcing a square peg through a round hole thinking and hoping that every business, every idea, and every concept would be better, sell better, sound, and look better on the Web.

As an entrepreneur with my share of failures equal to my share of successes, I can see that the ratio is no different on the Web than in *real life*. Over the course of history, brick and mortar businesses have always failed at a fairly stable rate. The Web created a new breed of business that have been dubbed *virtual businesses* and that opened a completely new level of business. Even though they seemed to take less capital to open, they nonetheless did not enjoy any more stability than traditional business start ups. The exception to the rule was (and probably will continue to be) an on-line business that could demonstrate that it was part of a well-established brick and mortar operation.

The Battle of the Browser

The popular browser-based World Wide Web came into existence in 1993, just 17 short years ago. It seems like we were never without it and all its trappings and many benefits. How in the world did we socialize without Facebook and

Twitter, how did we find anything without Google and Yahoo, and who were the whiz kids, many without a higher education, who came up with those crazy names anyway?

The history of mankind is made up of *defining moments*, sometimes errors, sometimes not, and the modern Web connected with a browser was no mistake. It will be said over and over again, in the ensuing years, with respect to how much and what kind of information has become available, we were simply in the Dark Ages before the post-1993 browser-based Web came into our lives.

The battle of the browser isn't about simply how to display information. It is all about how to control information. In contention are the biggest players, the Microsoft's Internet Explorer, Apple's Safari, Google's Chrome, and Mozilla's Firefox. Early on there was just Mosaic, then Netscape. Netscape officially gave up the ghost on March 1, 2008, and threw their support behind Firefox, AOL, and Flock. Did you ever wonder why none of them ever charged for their product? They wanted to lock your preferences into their product early on and then offer more revenue-based services tied into the browser.

People as users became fiercely loyal to one browser or another. The browser is thought to be the single most powerful tool in the entire arsenal of Web tools. Given the right set of circumstances and permissions, a browser can track the number one thing that the Web is built upon . . . information. That was true in the beginning and it is true today. The race is on and it will be a bitter and dangerous race to see who controls the most information in the next five years. Every single fact or piece of information, no matter how insignificant it may seem, is worth revenue to someone or some company.

Bandwidth Becomes King

By 2000 there was only one issue standing in the way of the Web having total media dominance and that was bandwidth. Without sufficient bandwidth a website would be no more than a static magazine advertisement. But with bandwidth, a website takes on life. For with bandwidth a website becomes interactive and could

be equal to or greater than broadcast television.

There is much pressure for governments to invest in infrastructure. More attention has been placed on access, but relatively little on bandwidth. Recently it was announced that the United States has awarded \$7.2 billion dollars in grants and loans to increase the broadband access to rural and low-income families (Reuters, 2010), and Finland has become the first nation to make broadband access a legal right of all of its citizens (QMI Agency, 2010).

Traditional broadcast media understands the growing bandwidth dilemma and is afraid for good reason. Let's look at the traditional evening newscast (airing at 6:00 PM here in Tyler, Texas, for example) on your local ABC affiliate. It takes about 12 rather well-paid folks to make it work. Three anchor persons, three camerapersons, one director, one producer, one news director, and at least three field reporters, at very least.

And even with that staff, the news when aired is typically at least two hours old. With a steady wireless connection and decent bandwidth, a smart fellow with a laptop equipped with free Skype can broadcast from the "scene" for about the price of a laptop and a monthly cell phone bill. He is now a one-man TV station communicating from anywhere, back to his

website, which can in turn be seen by the entire world that accesses the Web. Get it?

Radio broadcast belongs to the satellite industry now and there is no life left for paper publications. Traditional paper publications of any note at all reproduce themselves happily on the Web every day. Happily, I say? By publishing only on the Web they will have 85% fewer employees, no paper costs, a decent stream of advertising revenue, and *The New York Times* and others like it conceivably can be profitable entities once again.

Will the Future Ever Come?

For as long as I can remember, year after year, some technology reporter on television would state emphatically that this was the year for the video telephone. I never saw one that worked. Until Skype. I always heard there was going to be a way to get a letter on your letterhead across the country in seconds. I never saw it until email came around. For years, I was certain that someday soon we would be able to do lightening-fast calculations on some of the fastest computers in the world from our own desktop. It didn't happen until the broadband Web came to life. The future you ask? It's here; it's now and always will be.

In the Words of John M. Richardson, Jr., "When it comes to the future, there are three kinds of people: those who let it

happen, those who make it happen, and those who wonder what happened."

I like to think that those of us who started in the earliest days of the Web-based Internet made it happen to the delight and productivity of those of you who let it happen and the chagrin of those who wonder what happened. If we ever reach the future it will be a sad day for technology because technology is the sole vehicle that brought us this far.

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