Nathaniel Borenstein, Chief Scientist, Mimecast (https://allthingsd.com/20130701/tomorrows-internet-more-than-more-of-the-same/index.html)

Tomorrow's Internet: More Than More of the Same
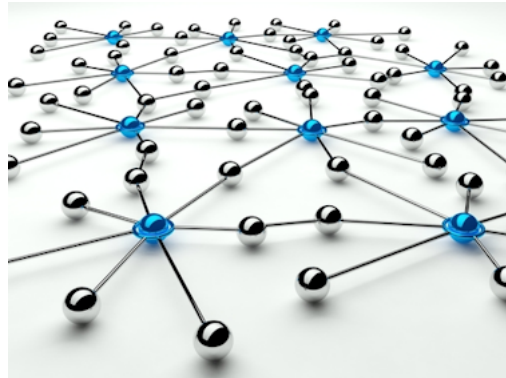
JULY 1, 2013 AT 2:07 PM PT

In 1980, I started graduate school at Carnegie Mellon to focus on computer science. Purely by accident, I had stumbled into being part of the youngest cohort of geeks who were building the Internet.

At that time, with over 100 computers and over a decade of evolution, the Internet was hardly new, and one could be forgiven for thinking it was more or less complete. But even as the vision

Leszek Glasner / Shutterstock.com

that drove its birth was approaching completion, newbies like me were just beginning to imagine the next Internet that might someday come to be.

It wasn't the astonishing and radical new technology that transformed my life and defined my career, it was the possibilities. To a youngster with a vivid imagination, the next 50 years seemed instantly (if vaguely) visible. So I joined a growing army of research labs and universities working to make it happen. At that time, we were driven not by profit, but by a mix of differing visions of what the world of the connected, web-driven future should look like — more an Internet of dreams and human progress.

Flash forward to our current Internet environment, which has seen many of our visions realized — such as universal email and the Web — and others — such as universal real-time communication — left like roadkill on the information superhighway. We know there is still much more that the Internet could be, but I'm fearing we will grow ever less likely to start another revolution if the Internet remains unfinished.

In the early days of the Internet, technology and politics were inseparable, and protocols were shaped by an ideology of openness and freedom. At that time, it would have been scandalous to imagine that something as important as Internet telephony, videoconferencing or chat would use competing non-interoperable protocols. Why can't a Skype user call a Google Voice user or a VoxOx user? It's outrageous, but open standards aren't at the top of today's Internet priorities.

Today, the most innovative, user-visible areas of work are the ones most likely to attract corporate interest, which means they are most likely to get stalled or stymied in the standards process. It's illuminating to compare a few old and new technologies:

Email vs. Instant Messaging

Email was designed over thirty years ago, without any thought of anyone dominating the market for email, or even that a commercial market might exist. Naturally, the idea of "anyone should be able to send any information or image to anyone" became a bedrock principle. After a brief period of resistance in the 1980s by the likes of AOL and CompuServe, it became hard to imagine anything but the globally interconnected email network we know today.

Instant messaging, on the other hand, had strong corporate roots from the birth of SMS texting. Moreover, the absence of early open standards facilitated the growth of proprietary services such as AOL's AIM well into the commercial era. The world of text messaging, from its birth, has been a set of separate networks, linked by neither service nor address.

Worse still, instant messaging set the tone for other forms of real-time communication, such as audio conferencing, video conferencing and more. There is no technical reason why these can't share universal addressing and interoperation, but a myriad of political and commercial reasons exist to prevent this.

The Web vs. Social Networks

The Web was born in a world where the Internet had achieved a kind of critical mass within a global community of academics, scientists and intellectuals. There were several competing alternatives, but these soon lost out because everyone saw the value of multiple, independent, interoperable browsers and servers, which drove the Web's rapid growth.

The Web was possibly the last massively popular Internet application to be based completely on an open standard. It made the Internet so wildly profitable that few if any subsequent successful applications have been built so openly.

By contrast, social networks don't share this extent of openness. The last thing they want is to make it easy for you to share with other social networks, so they've built walled environments that keep interaction and data siloed within each specific network. With so many people as users of more than one social network, effort and time are wasted posting and reading in both places.

There is a giant opportunity for enterprises small and large to push our Internet boundaries so we can still get the open Internet we deserve. The key to making progress lies in helping private and public organizations, and especially our students, better understand what is possible. When our younger generations understand the limitations of today's Internet and cloud applications, they will begin to imagine something better and push our current technology to create more.

It is absurd to imagine that today's Internet, less than half a century old, is everything the Internet can or should be. Considering how the Internet and cloud-based applications have forever changed how we share and consume data — both personally and professionally — I have no doubt the next wave of Internet visionaries can preserve the Internet as a place for economic innovation while solving the problems of closed and incompatible applications. It may take a little help from public and private organizations, but mostly it will take imaginative thinking and energetic implementation — much of which, incidentally, will also produce the next generation of Internet millionaires. As we've seen recently, the most commercially successful Internet companies have usually followed in the wake of the most visionary Internet dreams.

I still have Internet dreams. I dream of an Internet where my email address is the same as my Skype ID, my Jabber name, my Facebook ID and my telephone number. And I believe that if enough people shared my dream, it could still come true. All that is needed is a vision far-sighted enough to look beyond the limitations of today's Internet and cloud services and the will to pursue it. There's still plenty of room left for innovation.

Nathaniel Borenstein is the Chief Scientist at Mimecast, and a scientist/programmer/inventor/entrepreneur who has been involved in Internet-related innovations since 1980, specializing in email technology, human-computer interaction and electronic commerce. He invented the protocol for multimedia email and sent the first email attachment.

Tagged with: AIM (https://allthingsd.com/tag/aim/), AOL (https://allthingsd.com/tag/aol/), Carnegie Mellon, CompuServe, email (https://allthingsd.com/tag/email/), Facebook (https://allthingsd.com/tag/facebook/), Google Voice (https://allthingsd.com/tag/google-voice/), instant messaging (https://allthingsd.com/tag/instant-messaging/), Mimecast, Nathaniel Borenstein, Skype (https://allthingsd.com/tag/skype/), VoxOx

---