

Nova Scotia · Q&A

N.S. technician who helped build the internet celebrates its 40th birthday

Jan. 1, 1983, marked a major moment in online history

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On May 15, 1991, a student and teacher at Parkview Education Centre in Bridgewater, N.S., check out an email delivered via the just-installed permanent internet connection. (Lorri Neilsen Glenn)

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In a time very different from our own, before the internet was ubiquitous in Nova Scotia, Dan MacKay worked diligently to get people connected.

This week he and other "internet veterans" celebrated a major milestone — 40 years of the internet as we know it.

"I was on the technical team building the internet in Nova Scotia, and that also put you on the technical team building the internet all across Canada and that was really exciting," MacKay told CBC Radio's *Information Morning Halifax* on Wednesday.

MacKay spoke with host Portia Clark about what it was like to be an internet technician in Nova Scotia 30 years ago, back when the technology was first being introduced in this province.

Their conversation has been condensed and edited for clarity and length.

You can listen to the full interview here:

So why is 40 years ago considered the birth date of the internet?

Forty years ago, we switched protocols. A lot of people know that there was a network like the internet created in the 1960s. That was a military network and it was called ARPANET. And in the 1960s, they were imagining how many computers could possibly be on the internet ... and they said a few hundred. So we'll build a network that can connect a few hundred computers. They were all the military computers from the bases across North America.

But by the mid-'70s, it was obvious that there was going to be a lot more than a few hundred computers on this network and they started building a new protocol called TCP and the two protocols were not compatible. So there was a day when they had to shut off ARPANET. They had to turn it off and turn on TCP, which is the protocol that we use today to do our e-mail and our web browsing and all the things that sit on top of that — YouTube — all of that is delivered by this protocol called TCP.

What did that look like to build out the internet in Nova Scotia? What's a concrete example of how you made that happen?

We had two teams. I was on the technical team connecting the wires and the routers and working with the [telecommunications companies] to get communication lines and getting modems to work. Because remember, in the bad old days people used dial-up and when you wanted to get connected to the internet, you fired up the internet software and it dialled the phone ... and it connected to a modem somewhere ... Those all had to be installed.



Dan MacKay was one of the techs who built the Internet in Nova Scotia and Canada. He spoke with Information Morning Halifax host Portia Clark on Wednesday. (Erin MacInnis/CBC)

OK, so that was the technical part. And the business part, people had to be trained. We did classes where people learned to use their software. Very often installing the software on people's computers was difficult. So we had a huge team of people helping with the ordinary business part of this as well. And we worked together, every single day.

I gather the high school you graduated from was involved in some of the early stages of connecting people?

Yeah, just by pure chance there was a local researcher, Lorri Neilsen Glenn from Mount Saint Vincent University, who dreamed of connecting students from a non-city high school in Nova Scotia to a non-city high school in B.C. for them to learn about geography and everything else about each other.... That project was called the Learning Connections and the high school was Parkview Education Centre in Bridgewater which, by pure coincidence, was the one that I had graduated from almost exactly 10 years earlier.

It was extremely, extremely exciting. The geekier of the students had used bulletin board systems before, but generally those were not connected out beyond, you know, their local area. And here they were emailing back and forth every day with the students in B.C.

How do you even put in perspective the changes that have happened since the birth of the internet?

I think the most remarkable change is the amazing amount of information and data we have available to us. The idea that ... there's 500 hours of video uploaded to YouTube every minute of the day, 24 hours a day. The amount of data that represents is just mind boggling and maybe lots of people don't think about that. But 20 years ago, anyone would have just said that's impossible. We will never have enough disk space for that much data, and we were wrong.

Wikipedia is kind of my favourite thing. You know, it's the modern library of Alexandria, the sum total of human knowledge in one place.



The Parkview Education Centre computer lab on the official opening day of Learning Connections. (Lorri Neilsen Glenn)

Where do you see the internet going in the next 40 years?

Well, it's very difficult to tell for sure. We have given up a vast amount of privacy already. The amount of privacy that we've given up so far would horrify most people 50 years ago. I can see that continuing to erode. This is a contract that we do. We give up our privacy in order to get free things, right? You don't pay for Facebook with money, you pay for it with your privacy.

“The amount of privacy that we've given up so far would horrify most people 50 years ago.”

- Dan MacKay

And it's possible that we'll see terrorism and war, based on attacks on our infrastructure. Because so much of our infrastructure is based on the internet these days. And in the last year we've seen massive failures of internet services that were not caused by nefarious agents. They're caused by people making mistakes. [When Rogers went down](#) and all the Interact [bank] terminals went down, that was not terrorism but it could have been. So we can see that someone who wanted to take down the internet, probably could.

You probably couldn't have foreseen some of those vulnerabilities at the very early stages?

We would never have guessed. Because the internet was so unreliable at the time compared to now and not ubiquitous, we could never have foreseen that we would be so dependent on it. On the good side, we're going to see much better voice assistance. We're going to see all kinds of cool things enabled by voice. We might actually get universal connection to the internet in Nova Scotia, which, you know, we were working on in 1995 ... Maybe 30 years later we're going to get there.