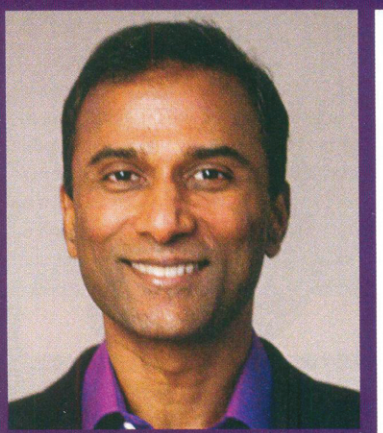
Interview with VA Shiva Ayyadurai – creator of EMAIL

We sit down for a chat with the person who gave email it's current form.

Mithun Mohandas
readersletters@thinkdigit.com



VA Shiva Ayyadurai, the creator of EMAIL

So how did you go about coming up with EMAIL?

The first part of the book talks about this whole journey. And at the Email is this business communication system. And because of that it's a formal messaging system and I called it EMAIL. In Fortran they had a naming convention where all variables had to be in uppercase and 6 characters only. And the OS was the HP OS called RT4 and that had another constraint where if you wrote a program, the program name could only be 5 characters, so I called it EMAIL. It was not an obvious term, infact when I wrote it I thought maybe I should call it EMALL. I didn't know how to pronounce it, if it were 9 characters then I'd have called it Electromail.

It wasn't a simple program, it was 50,000 lines of code. And we worked on 64K memory and we had to have another layer to perform memory swapping. And it had a nice UI because we had to convince secretaries who'd never seen computers. It wasn't like morse code and it had to be made easy. It didn't have GUI but we had an easy to use interface and one of the things it had to be was bullet-proof. That was one of the mottos when we wrote code. So we used a relational database and we'd never transport the message but a pointer. So one of the ideas was that we'd save the message only once. And for that I won one of those awards it was called the Westinghouse awards, today it's called the Baby Nobles. Back in 1978 no one knew what software was since it was new. The copyright act of 1976 was amended in 1980 to support copyright of software. So I got the first copyright for EMAIL - computer program for inter-office mail system.

So how do you see email evolving?

What we're going to start seeing are more gestural stuff and that's going to change the way we're going to interact with devices. And I don't think it's that long ahead where you 're gonna see more and more signal processing occurring looking at thoughts. At some point in the future we're gonna be able to map what we're thinking and it's going to be a very different world where we'll see more devices like google glass.

Email is very insecure, what's happening on the security front?

In corporate areas they have two types of email, one is the open email and the other is secure email. They'll have a normal interaction where you'd be sent a non-secure email and that would tell you that you have a secure email and that would send you to a secure server through private key or public key. And we're going to see more and more corporations move to secure mail and you'd have a public key on your phone to access your email. And with quantum computing coming up, you could bust all these security systems overnight so these security systems will have to scale accordingly.

So what are you working on currently?

In 2007, a new field developed called system biology. After the genome project ended in 2002, there have been some fascinating experiments where they've changed conditions and you could turn on or off certain genes. So when you eat certain foods or meditate or perform certain actions that those phenomenon could turn on or off genes. I said to myself that I knew how to build large scale systems so why not create an electronic version of the human cell system. We called it Cytosolve. Then we had high throughput imaging started happening and since we could observe the rates of interactions in the human body. We could now calculate rate constants. So what if we could create the molecular pathway model of the human cell. So I took that up for my Ph.D. People in the wet labs had already done a lot of experiments so if you could combine these computationally and mechanistically then we should be able to model disease. So we looked at pancreatic cancer and looked at all the different studies done. So the strategy in cancer is to restart the normal apoptosis for cell and stop metastasis. We looked at the literature and we found all the different pathways that looked at apoptosis and built a model for the same and then we made a model for cellular proliferation. Then we looked at all the existing generic drugs and with a combination we were able to lengthen the proliferation cycle. So with a hybrid approach we were able to reduce the dosage of these drugs. So by looking at everything like a system we were able to do something.