"Email is Not Dead. It is Here to Stay"– V.A. Shiva Ayyadurai, the Inventor of Email

Q&A

V.A. Shiva Ayyadurai

V.A. Shiva Ayyadurai is a scientist-technologist, entrepreneur and educator. He has been an inventor since the age of 14.In 1978, Shiva invented email, while a 14-year-old high school, working as a research scholar at a small college in Newark, NJ.Shiva invented and defined "email" as we all know and use today when he created a computer programme which replicated electronically all of the functions of the interoffice paper-based mail system: Inbox, Outbox, Memo, Address Book, Attachments, Folders, etc. --- the system that was the foundation of every office, from the President of the United States on.The United Stated government formally and legally recognized Shiva's invention of email by awarding him the first US Copyright for "Email", "Computer Program for Electronic Mail System", in 1982, at a time Copyright was the only way to protect software inventions. He went on to receive four degrees from the Massachusetts Institute of Technology (M.I.T.) and start seven companies. He is a Fulbright Scholar, Lemelson-MIT Awards Finalist and Westinghouse Science Talent Honors Award recipient, and the First Outstanding Scientist Technologist of Indian Origin. He created Systems Visualization, a pioneering new course at MIT, in the Department of Comparative Media Studies, to enable MIT students to communicate through art and design complex systems. He is also the Founder and Executive Director of the International Center for Integrative Systems and Innovation Corps. He had an interactive session with BE's Abhijit Ganguly about the relevance of email, his new book The Email Revolution by Penguin, and about Innovation Corps --- a foundation he launched to enable youth innovation from India to the United States.

It is widely felt that email is dying. Is it true? What can be an alternative?

When you look at the origins of email, email is the electronic version of the interoffice mail system. When people say email

is dead, they say that out of ignorance. When we understand that there are three types of communication streams, this ignorance becomes apparent, as I discuss in The Email Revolution.One stream of communication is short messaging. Short messages are sent when you want to get out the message very quickly. Such form of messaging dates all the way back to smoke signals, drum beats, in ancient times. In modern times, when a secretary takes a little note or leaves sticky notes --- that's a form of short messaging. That's very similar to our current digital communication with forms such as chat messaging, SMS, or Twitter.

Another stream of communication is community messaging. That dates back all the way back to cave paintings. People would get together and do cave painting as one community, each "posting" their part of their painting --- the original "Facebook". In this lineage, we have the community bulletin board. That's essentially what a blog is today. The communications are posted, made public, and everyone can give their "two cents". The third stream of communication really comes from formal business communication. This stream of communication dates all the way back to when writing began, originally done for commerce, on stone tablets, then papyrus. In the office environment this appeared as the "Memo" --- interoffice memos. The memo was very structured, and required an entire system --- the interoffice mail system to support its processing and distribution, with a complex set of functions and parts.

Between 1978 and 1993, before the web took off, email was used in the business environment. You didn't need the Internet. Email was used on Local Area Networks (LANs) or Wide Area Networks (WANS). In 1993, when the Web came, we saw web-based email applications, such as HotMail, and AOL, which had the same functions as email, the first system I created in 1978. For consumers, email was now avaiable supporting B2C communications. A consumer could send an email to the White House or to Nike.

With the coming of SMS, some experts proclaimed "email is dead". When Facebook and bulletin boards came along with the discussion threads, people like Mark Zuckerberg also started making comments, "email is dead". Gmail originally provided just email, then added chat (short messaging), and then began adding community messaging functions like Facebook, in Google Plus. Facebook had to respond to that. Facebook had chat and community messaging but did not have email. The day Zuckerberg said email was dead was the same day Facebook was adding email functionality! So when you look at Facebook and Gmail, they really have those three streams of messaging. It is absolute insanity to say email is dead, when the facts show email volume continues to grow, and more commerce and business is done via email than any other digital medium.

For business people, the key is to recognize that email is going to be here for a long time. The case studies we share in The Email Revolution provide a range of examples of how to exploit email in creative ways to get, keep and grow customers. In fact, email is becoming more and more an acceptable part of formal communications. In the last five years, some of the European courts have ruled that email can be used to issue warrants and summons, for example.

What do you think about the state of research in Indian educational institutions? How can research and innovation be encouraged in these institutions?

I was appointed in 2009 to set up the largest innovation initiative by Prime Minister Manmohan Singh from CSIR, to launch CSIR-Tech. I was recruited as an Additional Secretary, Scientist Level H, in the Indian government. I saw first-hand the incredible talent within India and its scientists at CSIR, but a feudal, nepotistic infrastructure never allowed those with real merit to rise. In fact, Lab directors were afraid of their own subordinates, that if they created something of relevance, the subordinate would get credit and supersede them!

I wasn't able to fulfil my goals at CSIR --- because the bureaucrats actually were incentivized to suppress Indian scientists. Some have called CSIR, the Council for the Suppression of Indian Research. The bureaucrats wanted me to be like a Barbie doll, so they could tell the Indian public, we hired this MIT guy and all is well. The problem was that I actually wanted to help India, my people. I naively thought I was hired to bring change. They could not bribe me with the nice house, servants, car, etc. In some sense, they made a big hiring mistake. I met many scientists --- some producing amazing innovations but the incentive model had been stifled. CSIR supported people writing papers and simply publishing patents ---not actually creating innovations --- the original intention of CSIR.

The truth is that there are a lot of smart people in India. Since 1947, India has not indigenously created any Nobel Prize winners in science or medicine. But if you follow my journey in inventing email, I innovated email before I came to MIT. Email was created by a 14-year-old Indian boy, in one of the poorest cities in the US.

What was the ecosystem that allowed me to innovate email in 1978?

The ecosystem was one of freedom and respect. There was no oppressive hierarchy. Even at the age of 14, I was given tremendous respect. I learned that innovation can happen anytime, at anyplace and by anybody. Business entrepreneurs already know this. You don't need necessarily go to IITs or the MIT to innovate. I've been an innovator before MIT, during MIT and after MIT --- so I know this all too well. I think ten to fifteen years from now, hopefully sooner, everyone will recognize that anyone can innovate --- and it won't be that surprising that a 14-year-old created email in 1978.

Innovation is part of our DNA, and no one should be owning or controlling innovation. People who control innovation are as bad as Monsanto trying to control seeds and monopolize farming. Currently, the world needs to create 3 billion new jobs in the

next 10 years. Right now we have 1.2 billion --- that means we have a deficit of 1.8 billion new jobs. Creation of those jobs is not going to happen by putting capital into a couple of "Innovation Centers" in major cities or hubs. Innovation has to be dispersed everywhere, so it can grow like an uncontrolled, wild seed --- if we are going to meet the need of those 1.8 billion jobs.

Last August 2013, back in Newark, NJ, the home of email, I have launched Innovation Corps. We want to identify twelve students in the 14-20 age groups in the US and an equal number in India. The aim is to unleash innovation in inner-cities, villages, by identifying and supporting those teenagers in high school who wish to see their ideas translated into tangible products and services. Innovation Corps will support such teenagers with both cash as well as services to foster an environment for innovation, by providing them a similar ecosystem I had in 1978: mentors, good teachers, access to infrastructure, some capital and local and community support. All of my proceeds of The Email Revolution are going towards Innovation Corps.

How can politicians use email?

Politicians can use email to understand their constituency and respond to their needs. Bill Clinton was aware of this as far back as 1993, as I share in the book. Back then, I worked with the White House --- my second life with email, when I won a contest to automatically analyse and sort incoming email, sponsored by the Clinton White House. That experience led to me starting EchoMail, Inc.

A few years later, I had dinner with President Clinton, and I shared how email could be used for extending the broadcast TV medium to have interactions with his constituency. He got this, and understood this better than most senior VPs of Marketing in major organizations. In an email, people tell you things that they don't do in a simple marketing survey because it's more intimate. By mining email, businesses can understand customer needs, get ideas for new products and be responsive. We also worked on George Bush's campaign. Email helped them in winning the elections. They used email to build relationships one-on-one by integrating their grassroots efforts with email communications.. I would suggest for any politician, while social media is good for getting "followers", email is where one can convert followers to voters.

What is your view on the Indian youth?

I think that India is poised for a very big revolutionary phase. The youth are extremely bright and nobody can mislead them. My role is to inspire the youth and make them recognize that India has a huge history of innovation.   ■ *BE Bureau*