

Innovations

# Smithsonian acquires documents from inventor of 'EMAIL' program

**Correction:** A previous version of this article incorrectly referred to V.A. Shiva Ayyadurai as the inventor of electronic messaging. This version has been corrected. The previous, online version of this story also incorrectly cited Ayyadurai's invention as containing, "The lines of code that produced the first 'bcc,' 'cc,' 'to' and 'from' fields." These features were outlined in earlier documentation separate from Ayyadurai's work. The original headline also erroneously implied that Ayyadurai had been "honored by [the] Smithsonian" as the "inventor of e-mail." Dr. Ayyadurai was not honored for inventing electronic messaging. The Smithsonian National Museum of American History incorporated the paperwork documenting the creation of his program into their collection. A previous version also incorrectly stated that had Ayyadurai "pursued a patent, it could have significantly stunted the technology's growth even as it had the potential to make him incredibly wealthy." At the time, patents were not awarded for the creation of software.

By Emi Kolawole February 17, 2012

*Clarification:* A number of readers have accurately pointed out that electronic messaging predates V. A. Shiva Ayyadurai's work in 1978. However, Ayyadurai [holds the copyright to the computer program called "EMAIL,"](#) establishing him as the creator of the "computer program for [an] electronic mail system" with that name, according to the U.S. Copyright Office.

[The Smithsonian](#) has acquired the tapes, documentation, copyrights, and over 50,000 lines of code that chronicle the invention of "EMAIL," a program created by V.A. Shiva Ayyadurai when he was a 14 year-old high-school student in New Jersey.

On Thursday, his name, [his 1978 invention documentation](#) and the associated copyright were entered in the Smithsonian permanent collection. The documentation will be archived in the National Museum of American History and put into an online exhibit. The documents will be scanned as soon as this week to be featured on a site under the Smithsonian.org domain. The date for the site launch has not yet been determined.

Ayyadurai's path to the Smithsonian started with a series of articles he wrote about the U.S. Postal Service's decline and his concern that the USPS was failing to innovate. His take: The Postal Service, carrying on the spirit of innovation which led to its creation, should have embraced e-mail years ago.

After a profile in Time magazine and a call from the Postal Service Inspector General asking for his ideas, Ayyadurai's alma mater, the Massachusetts Institute of Technology, called to insist that it would be improper for the university to take the documentation of his work, and that it belonged in the Smithsonian. Conversations began, eventually leading to the Smithsonian's latest addition and the celebration Thursday.

"My mom just passed away. So, it was unfortunate she wasn't there," said Ayyadurai during an interview at the Washington Post Thursday afternoon. "She represented for me a woman who came from very, very meager backgrounds — struggled to come here and then become a mathematician herself at a time when women weren't supposed to get an education and work at a university as a systems analyst."

"I think, without my mom," he continued, "I would not have, as a young person, been introduced to that environment and had the opportunity to work there."

Ayyadurai recounted how a family friend who had heard of MIT recommended that he apply. Reluctant, Ayyadurai filled out his application in pencil, with the family friend standing over his shoulder to make sure he finished.

"I didn't even know about MIT until two weeks before I applied," said Ayyadurai.

When he arrived he entered an environment still shadowed by racism. It was the beginning of the Reagan Administration, and the campus, like the rest of the nation, was still struggling to integrate. And there was another problem: "The people there didn't seem very happy," said Ayyadurai.

"I came in having developed this e-mail system, and when I went to my classes I was very bored. ... I, essentially, got involved in a lot of radical politics," he continued.

Coming from India, which, at the time, had a rigid caste system, he identified with the black and poor white students on campus.

"I was very intrigued by how do you change the system," said Ayyadurai, who balanced his time between the studying technology and studying politics. Changing that system, he continued, was more complex than developing an e-mail system.

### **A recommendation for the young inventor**

When it comes to today's young people, particularly the 14-year-old eager to become an inventor, Ayyadurai recommends embarking on independent studies, and taking a break from school before heading to college.

"I, in fact, believe people should work before they even go to school," said Ayyadurai, a faculty lecturer at MIT in the Biological Engineering Division. "Many people don't even know why they're going to college."

But he's not against going to college entirely, rather he is a fan of a combination of experiential learning and rote discipline. After all, Ayyadurai is at the front lines when it comes to preparing America's youth for careers in science and technology.

He developed a class on traditional medicine and systems technology and another on systems visualization at MIT. The latter gives students who would otherwise not engage in the arts an opportunity to illustrate a complex concept. The course went from 6 to 32 and now 50 students, becoming one of the most popular classes on campus.

Based on his experience with the class, Ayyadurai recommends teaching the systems first and then bringing in the more complex, detailed math and science.

"The problems of today's world are not just learning how to build a computer better or writing a software program. A lot of that stuff is being outsourced," said Ayyadurai. "The big problems are large-scale systems." Think education, transportation and even relationships, he said.

"If we can teach students that the world is very complex and to understand that complexity you need to have a systems approach," he continued, "I think that systems approach is what students want to learn."

### **The intellectual property debate**

"I fundamentally do not believe in the patenting of software," said Ayyadurai. "It would be like Shakespeare patenting the tragic love story."

He admits that in his work as a venture capitalist he has had to go against his own belief. But, rather than patents, Ayyadurai prefers copyright, which allows others to innovate using the technology.

### **America, freedom and innovation**

"We fail to recognize how much freedom we actually have here relative to these other countries," said Ayyadurai when asked what the United States gets wrong when it comes to moving its innovation economy forward.

"That awareness," he continued, "is what needs to be developed for people."

India and China, two countries making significant strides in technology and innovation still lag behind the U.S., according to Ayyadurai, who says it's due to a lack of fundamental freedoms in those nations.

"We should not really have any types of jobs issues here," continued Ayyadurai, saying that the "basis of American democracy" is innovation.

"Innovation actually demands freedom, and freedom demands innovation," said Ayyadurai. "I don't think there's more money we need to throw at it."

Ayyadurai also has some recommendations for the presidential candidates when it comes to policy proposals that will accelerate rather than slow innovation growth.

"Small businesses, I believe, are the place where innovation really takes place," said Ayyadurai.

With venture capital moving away from mid- and small-tier businesses, those companies are in need of government assistance. "There's this whole strata of small businesses that needs tax credits, I think."

### **Are we overcommunicating?**

"I think people are overcommunicating in the sense they have missed out on what is communication," said Ayyadurai.

"A lot of time when people are texting, it's not the content — you don't need to text — but people are doing it just to connect with another human being, so a lot of the information is almost irrelevant."

"I think we're in this phase now in humanity where we have all these communication vehicles but we still are, as humans, trying to figure out how do we connect," he continued, "because that ritual mode of communication is removed from us."

[Watch clips of the Post's interview with Ayyadurai on Innovations.](#)

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