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OP-Ed

A.I. Still Needs H.I. (Human Intelligence), for Now

Chatbots and other computers are learning, but we still have skills they don't.

By THOMAS L. FRIEDMAN

BANGALORE, India — Fifteen years ago I came to Bangalore, India's Silicon Valley, to do a documentary on outsourcing. One of our first stops was a company called 24/7 whose main business was answering customer service calls and selling products, like credit cards, for U.S. companies half a world away.

The beating heart of 24/7 back then was a vast floor of young phone operators, most with only high school degrees, save for a small pool of techies who provided "help desk" advice. These young Indians spoke in the best American English, perfected in a class that we filmed, where everyone had to practice enunciating "Peter Piper picked a peck of pickled peppers" — and make it sound like they were from Kansas not Kolkata.

The operations floor was so noisy from hundreds of simultaneous phone conversations that 24/7 installed a white-noise machine to muffle the din, but even then you could still occasionally hear piercing through the cacophony some techie saying to someone in America, the likes of: "What, Ma'am? Your computer is on fire?"

Well, 24/7's founders — P.V. Kannan and Shanmugam Nagarajan — invited me back last week for an update. Their company is now called [24]7.ai and their shop floor is so quiet that the operators are encouraged to play their own music. The only noise is from the tapping on keyboards, because every query — from customers of U.S. retailers, banks and media companies — is coming in by text messaging from smartphones, tablets, desktops and laptops.

These text queries are usually answered first by a [24]7.ai chatbot, or "virtual agent," powered by A.I. (artificial intelligence) and only get handed over to a person using H.I. (human intelligence) if the chatbot gets stuck and can't answer. The transformation of [24]7.ai from perfecting its accents to perfecting its insights illustrates in miniature how A.I. is transforming the whole work landscape.

In a nutshell, the U.S. and Indian middle classes were built on something called the high-wage, middle-skilled job. In an A.I.-driven world, such jobs are becoming extinct. Now there are mostly high-skilled, high-wage jobs and low-skilled, low-wage jobs, and a dwindling number in between.

Virtually all of the [24]7.ai human operators today have college degrees, because they need to be able to text with good grammar in English, understand the interaction between the chatbot and the person calling for service and communicate with expertise and empathy when the chatbot runs out of answers.

At the training class I sat in on last week, Peter Piper was gone. He was replaced by a competition among trainees over who could grasp first exactly when the chatbot — which [24]7.ai calls by the woman's name Aiva, for Artificially Intelligent Virtual Assistant — could no longer understand the "intent" of the customer and what that intent actually was.

It's at that critical point that the human agent not only has to step in and answer the question that Aiva couldn't, but also to "tag" the customer's queries that stumped the bot and feed them to [24]7.ai's data scientists, who then turn them into a new, deeper layer of artificial intelligence that enables Aiva to answer this more complex query the next time. (Kannan is about to publish a book on A.I. called "The Age of Intent.")

The data scientists who figure out the upgrades for chatbots that handle text are called "digital conversation designers." For another, small part of the business, data scientists for chatbots that speak in computer-generated natural language are called "voice conversation designers."

"It's a cool job," Santhosh Kumar, a 45-year-old conversation designer, who came up through the 24/7 system, said to me. "You are designing what the chatbot should be saying to the customers." It is all about "how to make a computer sound like a human." Banks want their bots to be formal; retailers prefer more conversational bots.

Another new term I learned here was "containment." That measures how deep into a conversation your chatbot can go without having to hand the customer over to a human agent. A company's "containment rate" is like its A.I. batting average.

Today, [24]7.ai's containment rate ranges from 20 percent to 50 percent of queries, depending on the company it is serving. Its goal is 80 percent. As the bots grasp more of each customer's intent, the skilled humans are redeployed to more complex services and sales, and that, said Kannan, "turns into better sales and keeping customer satisfaction high."

His chatbots, Kannan explained, are built with a "negative sentiment detector" to identify angry customers, so "we auto-generate sympathy when we can," but for the most part "complexity and empathy" are left to the humans.

Hollywood and Bollywood movies lately "have created a really bad impression that robots are going to take over," said Irene Clara, a trainer. "I don't think that fear is justified. I think we grow together. When you're teaching Aiva, you're getting skilled yourself, and without that Aiva becomes incompetent."

So — for now — if you have critical thinking and empathy skills, Aiva is your friend. But I wonder what happened to all those Indian high school grads I met 15 years ago. Because if you don't have those skills — and just have a high school degree or less, which applies to hundreds of millions of Indians — or you are doing routine tasks that will be easily roboticized, well, Aiva the robotic fruit picker, Aiva the file clerk or Aiva the trucker will not be your friend.

So what will a country like India, with so much unskilled labor, do about this challenge? It's coming. But so is a possible savior. It's also called technology and A.I.

While technology taketh it also giveth. India's newest high-speed mobile network, Jio, in just the past couple years dramatically slashed the price of cellphone connectivity. This has taken smartphone diffusion much deeper into Indian society than ever before, connecting those making only a few dollars a day to the mobile network, and

creating a vast new tool kit to lift them from poverty.

In Mumbai, for example, I met with Sagar Defense Engineering, founded by Nikunj Parashar, which is using technology spun off from the defense industry to create a simple vessel, connected to satellites, that rag pickers, the poorest of the poor here, can be quickly trained on to target and collect the pools of waste that float atop so many Indian rivers and lakes — and get paid for it by the ton.

I also met with LeanAgri, founded by Siddharth Dialani and Sai Gole. It is using A.I. to create a simple cellphone-based app to make poor Indian farmers more successful. The app creates a "dynamic calendar" that tells each farmer which and how much seed and fertilizer to use, the quantity of water to apply and at what time based on changing climate

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conditions. LeanAgri's pilot has been serving 3,000 farmers in three Indian states, where some have already seen tenfold increases in their incomes, the company said.

In Bangalore, I visited the EkStep Foundation. It was started by Nandan Nilekani, a co-founder of Infosys; his wife, Rohini; and the social entrepreneur Shankar Maruwada. EkStep ("One Step" in Hindi) argued that if India's current youth bubble gets left behind by globalization and technology, India's future will be tied to a giant ball and chain for the rest of the century.

EkStep has created a free, open-source digital infrastructure called Sunbird for making personal learning platforms. The Indian government leveraged it to create a national teachers' platform, Diksha, which enables different states to put QR codes linked to all kinds of topics in their millions of old paper textbooks.

Now, all that a student or teacher or parent has to do is point a cellphone at the paper QR code and it opens up a universe of interactive content — lesson plans for teachers and study guides for students and parents — giving India a chance to improve numeracy and literacy at a whole new speed and scale.

So don't write the conclusion of this story yet. Thanks to A.I., Peter Piper just might be able to pick a lot more than a peck of pickled peppers — so many more that not only the top of India's society will rise, but also the bottom.