

As Technology Matures, Voice-Command Cos. Start To Make Noise

By Timothy Hay

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Speech-recognition technology has long been a staple of sci-fi movies and futuristic fantasies, in which we simply speak our commands out loud and our gadgets make it so.

But the reality of speech recognition was less modern than muddled, with balky software producing translations that had only the slightest relation to what was said. Recently, however, voice technology has turned a corner, and companies ranging from start-ups to tech giants are fighting to take advantage.

"Accuracy rates crossed a magic threshold," said Dag Kittlaus, chief executive of San Jose-based Siri Inc., one of several venture-backed companies offering a product that hinges on speech recognition and voice commands. "When you get to 95% to 97% accuracy, it becomes magical. Frustration drops off. That's where it's gone today. Hollywood has been imagining this for decades, and now we're there."

Siri is like a number of companies offering voice-based products today - rather than building speech-recognition technology from scratch, Siri contracts with voice-technology pioneer Nuance Communications Inc.

Nuance is credited with paving the way for the start-up companies and established tech giants targeting the growing market of mobile phone users, who are eager for more ways to communicate and find information while on the go without having to type commands on small screens.

"There's been a sea change of momentum around this in the last six months" because of new mobile devices hitting the market, said Michael Thompson, a Nuance senior vice president and the general manager of its mobile division. What's been lacking in the past -- consumer demand -- is now materializing, he added.

Nuance began its life as a Stanford Research Institute spin-out, and spent the years before and after its 2007 initial public stock offering buying up venture-backed companies working on speech products. Massachusetts-based Nuance currently dominates in speech-to-text conversion, which has applications in health care, the military, and for consumers. The company's Dragon Dictation program -- the latest offering from Nuance -- has been hugely popular in Apple's App Store.

But voice-based search -- which has only been made possible fairly recently -- is the brass ring that companies like Google Inc., Microsoft Corp. and venture-backed start-ups want to grab. While the field is crowded, the little guys are not afraid of their larger rivals.

"Name me in history one example where a big company beat out a smaller company when it comes to technology," said Bob Davoli, a partner at Sigma Partners and an investor in Vlingo Inc., which uses Nuance technology to enable users to compose emails and text messages, create Twitter and Facebook updates, find local businesses, or search the Web using voice commands.

Massachusetts-based Vlingo has also been backed by Yahoo Inc., which uses Vlingo to power its own voice-search programs, and by Charles River Ventures, where investors have a long history backing speech-recognition companies.

The Origins of the New Wave

Izhar Armony, a Charles River general partner who has been investing in voice programs for the past decade, says his portfolio company Vlingo can go head-to-head with Nuance and others because the company "invented this space."

If anyone understands the interrelatedness of companies like Nuance and Vlingo, it is Armony.

Nuance in 2005 merged with voice companies ScanSoft Inc. and SpeechWorks Inc., and retained the

name Nuance. Charles River Ventures had invested in SpeechWorks, Armony said. Nuance went on to acquire about a dozen start-up companies over the next several years.

After the merger, SpeechWorks' founders came to Charles River Ventures with the idea of forming a new company. Armony provided seed funding and office space for the fledgling enterprise, he said.

That company -- which now has 50 employees, \$50 million in venture backing and a popular free iPhone app -- is Vlingo.

"We've got the attention of the big guys, and we are not at all afraid," said Dave Grannan, Vlingo's chief executive. "We have far superior technology. We benchmark ourselves against Google" and compare favorably.

Google and Microsoft sell or give away voice-search products to the users of their phones, meaning companies like Vlingo won't directly compete with them. But Vlingo will go up against Nuance and others as it seeks to have its program installed by major equipment makers and offered by the country's wireless carriers.

Going Beyond Search - The Personal Assistant

According to Bill Meisel, a consultant who holds several patents related to speech recognition technology and is credited with writing the first textbook on the subject more than 30 years ago, Google is straining hard to dominate voice search. But there are a number of other mobile applications for voice that can easily become just as prized as search is, he said.

"The killer app for this will be the voice-activated personal assistant," Meisel said. "Siri is just one type of assistant, for business and scheduling. It's tuned that way."

After being released to fanfare in the iPhone App Store in February, the Siri personal assistant has caught a lot of attention.

"I use Siri all the time. It's pretty slick," said Thompson, the senior vice president at Nuance.

Siri, which like Nuance is a spin-out from Stanford Research Institute, uses speech recognition technology from Nuance, but has added a layer of artificial intelligence to create a downloadable personal-assistant program that purportedly gets smarter -- and delivers better targeted search results -- over time.

Siri's app, called Cognitive Assistant that Learns and Organizes, or CALO, has been released as a free application for the iPhone. In the future, the company hopes to partner with manufacturers to bring its technology to cars, homes and spacecraft.

"As it gets to know you, Siri becomes your right-hand man," Kittlaus, the CEO, said. "This is free-form interaction with a machine."

Siri's app is connected to a whole ecosystem of Web services and programming interfaces, and has the ability to activate other applications that reside on a smartphone. A Siri user can simply say, "Tell my wife I'll be 20 minutes late," and Siri scours the user's social networks, address books and other programs, finds the person tagged "wife," converts the message to text, and sends it directly to her phone.

"It knows you like aisle seats when you travel," Kittlaus said, explaining that its cognitive software enables users to vocally direct it to make plane reservations. "We're the first consumer property using all these technologies."

More voice-activated personal assistants are on the horizon, according to Meisel. One early-stage company in Los Angeles, GetFugu Inc., has released a voice-based assistant for the iPhone, but one that

is geared toward shopping. The company has raised \$15 million from founders and angels.

Other assistants -- tailor-made for the health-care industry, the military and other applications -- won't be far behind, Meisel said.

Although companies large and small will often be competing for the same customers, venture investors who have backed the smaller players are confident.

"There's never been an instance where a big company beat out a small company before the VCs got their money out," said Davoli, the Sigma Partners investor with a board seat at Vlingo.