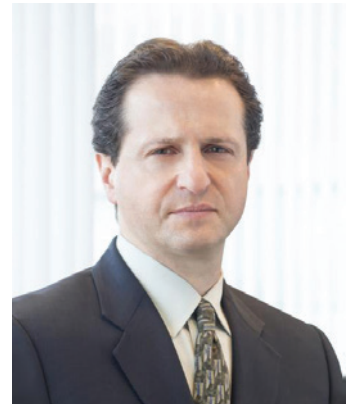


Most Interesting Vendors 2016: Nuance Communications: The Power of Clinical Language

Nuance has earned its reputation on developing solutions that help accurately describe what is being done to the patient



Peter Durlach

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This year, as in past years, Healthcare Informatics has designated three vendor companies in healthcare IT as “Most Interesting Vendors,” and is featuring profiles of those three companies in its Healthcare Informatics 100 issue, which this year is our May/June issue. The “Most Interesting Vendor” designation is not an award, but simply a recognition. The trajectories of all three companies speak to some of the broader trends taking place in healthcare IT in general and in the healthcare IT vendor market, and are thus of interest to readers. Yesterday, we published the story of Leidos. In this second of three articles, we profile the Burlington, Mass.-based Nuance Communications.

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Working professionals worldwide likely are familiar with Nuance Communication’s Dragon speech recognition technology, as the company’s long-standing flagship software allows for fast dictation that can be applicable across several industries. In healthcare alone, a recent KLAS Research study found that nine in 10 providers plan to expand the use of speech recognition technology.

Indeed, senior executives at the Burlington, Mass.-based Nuance, a provider of voice and language solutions for businesses and consumers around the world, with nearly 10,000 healthcare technology-related employees, are well aware that most people know the vendor as a speech technology company. At a basic level that’s fine, says Peter Durlach, Nuance’s senior vice president of marketing, product management and strategy, noting the company’s physician-centric approach, as doctors are who the legacy products are designed to work for. “They are the ones who drive the quality of care delivered, along with the rest of the care team, as well as the economic viability of that institution. “We take pride in supporting those caregivers on the front line,” Durlach says.

But at a more granular level, inside and outside the walls of Nuance, the bar is being set higher, Durlach attests. No, developing voice dictation software is not what makes Nuance so special, he says. Rather, it’s about improving clinical documentation to drive better outcomes, be it clinical, financial, or quality, he says. “I understand why people know us a speech company, and it’s for good reason. But we are [about] more than that,” Durlach says.

Nuance’s solutions are built to capture documentation in any language, anywhere, on any device, for any care setting, Durlach says. “Our solutions are about what’s in the documentation to

more accurately describe what is being done to the patient, how sick the patient is, or what set of clinical data can be extracted from that documentation,” Durlach says. “The [solutions] also allow you to share and communicate that information in the documentation for [various] reasons such as getting paid, for quality purposes, or to help with care delivery as patients move from care setting to care setting,” he says.

Nuance’s largest vertical is healthcare, in which it reported a revenue of nearly \$1 billion in healthcare IT products and services earned in the U.S. in 2015—a figure that put the company 14th on the list of *Healthcare Informatics*’ 100 vendors with the highest health IT revenues. Within the last few months specifically, there are multiple areas Durlach points to within Nuance that illustrate the company’s noteworthy growth.

Indeed, he first points to the vendor being a large and growing clinical documentation improvement (CDI) business. In this bucket of solutions, Nuance has a new set of technologies for providing automated real-time clarifications for physicians when they’re documenting in the electronic health record (EHR). These products are broadly under the category computer-assisted physician documentation, Durlach says. “As the physician is documenting the case, we extract structured data out of that and we look at what else has been collected in the EHR, and we make adjustments,” he says. “It’s like having a virtual system in the EHR that’s providing real-time feedback to the physician, so the physician isn’t being pinged hours or days later.”

Regarding innovation around computer-assisted physician documentation, Durlach says, “The history of the patient and the thought process of the clinician is done in true narrative form which is what the doctors all want to do pretty much. It’s not just about the person documenting, but the next person in the care delivery process getting that information out of the EHR. That’s a huge pain point, and it’s something we attack to maintain the integrity and clarity of that narrative.”

To this end, one of the big areas of struggle for physicians is to balance the fundamental need to use physician documentation to create and preserve the patient narrative with the need to extract a host of other information from the physician note, for reimbursement, outcomes quality, population health, and other worthwhile purposes. Durlach says this is where natural language processing (NLP)—or what leaders at Nuance call clinical language understanding (CLU)—comes in with its

ability to analyze and understand the content of a dictated note in real time, enabling the technology to identify gaps and ambiguities in the note, and give the physician pertinent and focused suggestions to improve clinical documentation. Durlach admits, however, that the natural language processing wave is still in its near infancy—probably a decade behind the speech recognition technology.

What's more, there is another Nuance solution that is embedded in a number of EHRs that automatically pulls out structured data, problem lists, medications, allergies, social statuses and more as a physician is documenting, and formalizes that into Systematized Nomenclature of Medicine (SNOMED), which is then automatically popped into the EHR, Durlach says. And then, the medical record will pop up a reconciliation screen that allows that physician to say whether that real-time information that is generated is right or wrong, and if it should be put into the record yet.

"Both of these examples of NLP are built in solutions for real-time and retrospective use cases," Durlach notes. "It gives the ability for people who are doing population health analytics to use that same technology to extract structured clinical data and mount it against claims data at a population level. As providers take on more financial risk and begin to risk stratify patient populations, if you don't have really good insight into the up-to-date clinical status of that patient in detail to drive those analytics, you won't do the best job you could. This is the heart of who Nuance is from a technology standpoint," Durlach says.

Durlach further points to Nuance's Dragon Medical One speech platform, a level beyond what Dragon Medical Direct offered in that its single voice profile means clinicians are up and running immediately across clinical workflows, care settings, devices, and apps. "It's effectively universal access to a high quality speech dial tone in the cloud, from any device, in any setting. It affords usability for clinicians as they work in different environments," Durlach says, comparing the model to an Apple ID or Google ID in which a user opts in for a Nuance Healthcare ID and gets access to an ecosystem of third-party apps that the speech technology can be used within. "In a way it's like Amazon Prime, so if you have a membership you can use that speech dial tone in this exploding ecosystem of apps for no incremental cost or training," he says, offering the example of looking up a drug reference by voice in that native app.

Yet another area of innovation at Nuance is its imaging space, as the company has been working with the American College of Radiology to put real-time evidence-based guidance into the reporting process for radiologists, based on guidelines related to the profession of imaging, Durlach says. "While the clinician is dictating, we have clinical decision support baked right into the process," he says. "And while they are documenting, we are helping them do the right thing for the patient," he adds.

"What did you look for and what data did you collect? Now you can get recommendations for things that should happen to the patient post-interpretation, and that's [significant] because the variation among radiologists in terms of how they interpret an imaging study and what they recommend is all over the place," Durlach says. The loss of quality and follow-up based on people

describing the interpretations in different ways is meaningful, he adds. Durlach mentions that as part of the Medicare Access and CHIP Reauthorization Act (MACRA) and how physicians will be paid in the future, "a lot of the quality initiatives around radiology will be tied to how you interpret the report and if you followed best practices around the interpretation process. That's a big deal," he says.

"A Clear ROI"

Most clinical end users of healthcare technology would probably jump at a product that could provide measureable ROIs for their organizations. Hal Baker, M.D., senior vice president, clinical improvement, and chief information officer (CIO), WellSpan Health in York, Pa. and customer of Nuance's, says that from the get-go, Nuance came in and started helping the organization with coding accuracy, significantly improving reimbursement by actively reflecting the severity of illness of its patients. "In IT, you rarely will see a company coming in and saying 'Here's a product, here's how you can improve, here's how much money you can save,' and a year later you can come back and prove that it did pay for itself," Baker says. "Most IT implementations have not had a clear ROI for us, but Nuance has done much better than average with that." When asked about Baker's comments on measuring ROI, Durlach says, "We don't have a perfect record, but for the majority of our mainstream customers, we produce results. That's because we are focusing on outcomes rather than selling a cool widget."

Above all, Baker points to technology from Nuance having the ability to pick up data out of spoken language, allowing for improvements in things such as specificity and imaging, which in turn drives better compliance and standardization of clinical processes, he says. "So if you have a narrative of two paragraphs, there used to be no data pulled from that, but now with natural language processing, you can pull data from that and apply it to the science of medicine and clinical improvement. The natural language processing has helped greatly with what has been a conflict to date between data and information," Baker says.

Baker further expands on the power of syntax and the elegance of language. "If we have a system taking care of diseases, we need data, but we have human caregivers taking care of human patients, so that involves spoken language, the same way a CD doesn't substitute for a eulogy," he says. He continues, "That's why people have been frustrated with EHRs, which have copious amounts of data but very little information of context, priorities, or a sense of certainty. Nuance has helped us make it possible for us to insert back into the record a great deal of spoken and written language without having to give up the data that underlies that. Data and language shouldn't be in competition," Baker attests.

What's more, according to Baker, healthcare is a business, medicine is a science, and healing is an art. As such, he says, "[NLP technology] allows us to not favor the business over the art of medicine and keep language in the record so we can communicate about people, and make people feel cared for and safe. Those are the critical aspects that drive a healthcare organization—the mission of providing care for the people who are your patients, not just to their diseases," he says.