Speech Recognition In Radiology

Freemium
Those in radiology are truly the pioneers of speech recognition technology. The department has traditionally been the earliest adopter of new tools in healthcare. They went from film to viewing and storing their images on PACS. When the opportunity presented itself to jump from the dictation train, they opened their arms to speech recognition.

While it’s debatable whether Nuance had a technological advantage, they were one of the first with a solution and aggressively developed partnerships with PACS, RIS and EHR vendors. In this report, we find that all of the vendors are doing a solid job but Nuance continues to dominate the market in terms of customers.

We reached out to the veterans of speech recognition use, those in radiology, to find out how happy and successful they feel they are with tools that they helped to advance in healthcare. This report gives insight into the following questions:

- What speech recognition system are they using?
- How happy are they?
- What systems are they integrating and how well do their PACS, RIS, and systems integrate?
- What vendors are first time adopters considering?
- What are the reasons that some are not considering speech recognition?
- Are those using the technology considering switching to another vendor?

We recently published insights on how speech recognition is working in the EHR space. We have upcoming research on how the solution relates to cardiology and pathology. You can sign in to your SmartData account to view all research we have on the topic of speech enabled tech.
An overwhelming 85% of those in radiology are currently utilizing speech recognition to create patient reports. This, compared to 62% in our recent report on speech recognition use with EHRs. Interestingly, there hasn’t been a huge increase since we last reached out to the market in 2016. Almost 83% were using it two years ago. Of the 9% who indicated something “other” than speech rec or dictating and transcribing, the majority said they were using a combination of the two.
Nuance continues to dominate the market with over three-quarters indicating they are using their tool. The number is down slightly from our 2016 outreach, but that could be accounted for by additional/different audience participation. Needless to say, when you look at the Net Promoter Scores and whether organizations are planning to switch vendors, it becomes clear that Nuance isn’t in danger of losing the top spot.

“System works well for the most part, but is finicky about certain words and occasionally is thrown off by pacing.” - Chief of Radiology
While feature/functions like ease of use, accuracy, speed, etc are key to a speech rec vendor’s customer satisfaction, so is how well the systems work and play with others. Chances are, the radiology department is integrating their speech solution with one or more other tools. We asked providers what they are integrating to (PACS/RIS/EHR), who they are using, and how well they integrate with those vendors.

Integration With Various Tools

Over half of those in radiology are integrating speech to their PACS. Those numbers drop significantly as RIS and EHR integration are a distant second and third place. This is not surprising as PACS is the primary system a radiologist uses by an order of magnitude over EHR and even RIS. Use PACS far outweighs even use of speech recognition.

Integration Satisfaction

Participants were asked to rate how satisfied they were with their integration. While across the board satisfaction scores were generally high, integration with PACS was the most seamless, and delivers the fewest headaches.

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<th>PACS</th>
<th>EHR</th>
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<tbody>
<tr>
<td>Integration</td>
<td>97%</td>
<td>94%</td>
<td>86%</td>
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<tr>
<td>Issues</td>
<td>No</td>
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PACS 97% No integration issues
EHR 94% No integration issues
RIS 86% No integration issues
It’s important to remember here that 85% of those who responded are currently using speech recognition. Of the slim 15% that aren’t, 41% said they have no plans to. The number one reason cited by those not considering is because they find speech recognition to not be accurate enough for their respective tastes.

Some Reasons for Not Adopting Speech Recognition

“Multi-linguistic environment is our first problem in the hospital, so it is difficult for a part of medical doctors to be recognized by the speech recognition system.” - Radiologist

“Personally I do consider this. However, our hospital is very much centralized and such a change would have to be rolled out in the whole hospital. I cannot have a single solution that is not compatible with our IT-Environment.” - Director of Radiology

“I've tried it, but it has a lot of errors.” - Radiologist
Replacement Rates

This may actually be more telling than the satisfaction scores. 98% of those with a speech rec solution aren’t planning on looking at anybody else, regardless of who they’re using. So, it appears that despite the occasional complaint that the system could be easier to use or more accurate, all of the vendors are doing an excellent job at keeping their customers loyal.

2% are considering switching to a new speech recognition solution

98% plan to keep their current solution. Not a replacement market.

Although there are only a handful of individuals looking to replace their speech recognition solution, you can probably guess who is being considered...Nuance was the only vendor mentioned by those looking to replace their current solution.

“They toolset is fairly complete, they are the leaders (so they won't be going away) and they seem to be expanding in areas like Natural Language Processing, DICOM SR, etc. They also have a number of integrations with companies like Imorgon.” - Director of IT
We had over 150 direct quotes from participants as to why they rated their vendor the way they did. We then took those responses and grouped them into certain categories. The first category deals with the tone of the comment, was it positive, negative or neutral? The second category groups comments by subject, were they talking about product, customer service, ease of use, etc?

### Overall Tone of Commentary

- **Positive**: 82%
- **Negative**: 5%
- **Neutral**: 13%

### Most Commonly Mentioned Topics

- **Functionality**: 21%
- **Support**: 14%
- **Stability**: 15%
- **Accuracy**: 15%
- **Ease of Use**: 14%
- **Integration**: 21%
- **Consistency**: 24%

### Overall Tone - Nuance Customers

- **Positive**: 87%
- **Negative**: 9%
- **Neutral**: 4%

### Overall Tone - M*Modal Customers

- **Positive**: 68%
- **Negative**: 21%
- **Neutral**: 11%
Conclusion

Overwhelmingly, radiologists are utilizing speech recognition and this trend is unlikely to change anytime soon. And, despite the fact that no system is perfect, overall radiologists are incredibly pleased with the performance of their chosen solution. With 98% of organizations indicating they wouldn’t switch vendors, it’s also clear that all of the vendors are doing a great job, from a high level at least. Simply put, speech recognition has become a key part of a radiologists workflow.

Nuance continues to dominate market share and it doesn’t look like anyone is close to unseating them in the near term. That said, radiology is arguably the most eager to adopt new technology. Whether that comes from speech rec or another area, vendors should be asking themselves, “how can we keep our customers happy as technology evolves?”

![Vendors Being Used - Trended](image)

For customers who have a license to Reaction’s SmartData, click [here](#) to view the full report. This will allow you access to vendors’ Net Promoter Scores (customer satisfaction), vendors winning business, and hundreds of direct customer commentaty.

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