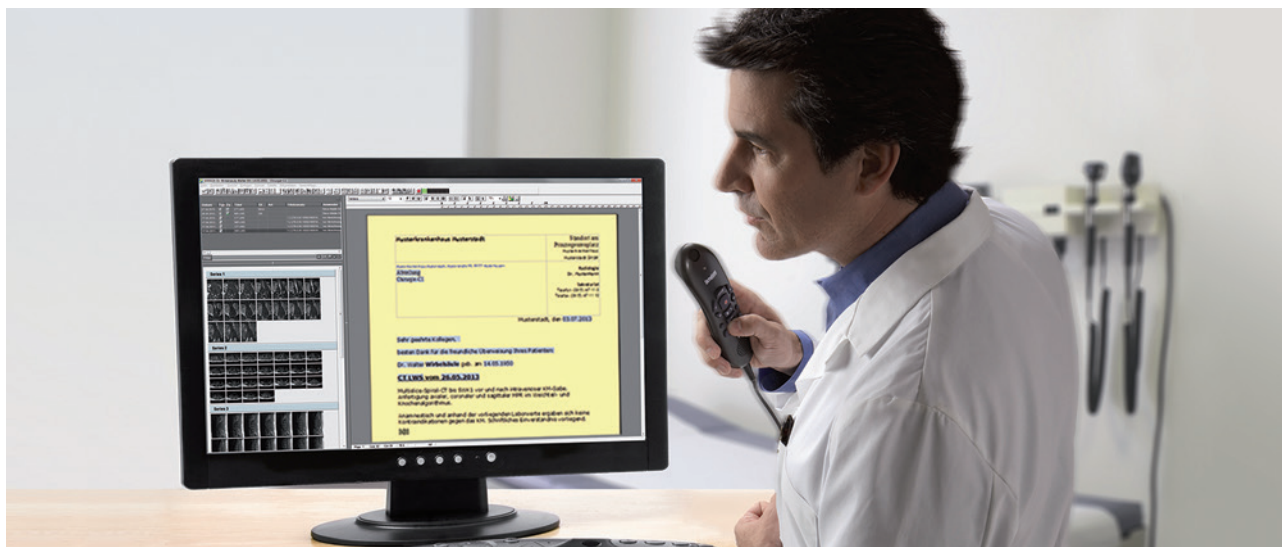


Addition of Speech Recognition leverages Potential of RIS



The physicians, medical-technological radiology assistants (MTRA) and admin staff at the three sites of the Gemeinschaftspraxis für Radiologie und Nuklearmedizin Ravensburg (clinic for radiology and nuclear medicine) all work digitally. Since 2001 they have been using the RADIOLOGY INFORMATION SYSTEM (RIS) from medavis, which interfaces with all modalities as well as the Picture Archiving and Communications System (PACS) and archive. Alongside the benefits of better medical interpretation of digitally created and evaluated images, the physicians and staff appreciate the value of an IT-based workflow. Further improvements have also been made since the integration of speech recognition in 2014.

From Index Cards to a fully integrated IT Solution

The physicians of the radiology department of the Ravensburg clinic work in an almost paperless environment. This was something they never would have envisaged back in 2001, when they decided to introduce the medavis RIS. The intention was to facilitate the admin of patient data and digitise accounting. The system proved so intuitive that users were very quickly able to use other features, for example to schedule treatments or simplify documentation. Technical details of examinations were subsequently incorporated into the documentation and all modalities, such as CT, MRT, scintigraphy and ultrasound, as well as the digital image archive (PACS), were quickly integrated. Today, both physicians and patients benefit from the medavis RIS. The use of digital imaging technology provides physicians with more detailed information for the evaluation of images and the radiation dose for patients can be reduced. The ability to retrieve information from any location means that second opinions can be provided in real time, reducing the duration of treatment.

Integrated Speech Recognition improves Cost-Effectiveness

Once all the data had been digitised, the RIS offered further possibilities for optimisation. "We wanted to accelerate the reporting workflow," says Dr. Lothar Keller of the radiology department at Ravensburg, and also responsible for IT within the department. For this reason, a decision was made to ditch digital dictation in favor of speech recognition. When physicians used to dictate onto cassette, the typists would type the dictations into the RIS and add them to the physicians' worklists for approval. The physicians would then, if necessary, make any corrections and approve the text. The report or admission note would then be dispatched. The introduction of digital dictation a few years later streamlined the process, but it would still take several hours from start to finish, even if a dictation was prioritised. "We also look after inpatients, and our colleagues at the clinic expect the report as soon as the examination is finished. To enable this, we introduced speech recognition," says Dr. Keller. No sooner said than done; a speech recognition solution

based on SpeechMagic from Nuance was installed and deeply embedded into the medavis RIS.

As a result, report creation has in most cases been reduced to a single step carried out by the physician alone. "We have saved ourselves a lot of time and consequently cost-effectiveness has improved greatly. I know from experience that it can take up to two years to achieve break-even. Here in Ravensburg we cannot yet attest to that. We are just happy that we're now able to work more simply and quickly," says Dr. Keller.

The deep integration of speech recognition into the RIS is integral to a seamless workflow. Physicians dictate directly into the familiar interface of the medavis RIS and at the same time they can see the image they are evaluating as well as the text they are dictating into their dictation device. Physicians can decide themselves when they want to correct errors or approve and send the text. Thanks to a good basic vocabulary provided by the vendor and additions by the clinic prior to the introduction of speech recognition, user acceptance was ensured, because the system made so few errors.

High Flexibility of medavis RIS

The advantage of adding speech recognition to the medavis RIS is that new words can be added easily to the vocabulary, and in Version 7 the accuracy trainer is much improved. The physician can decide when to trigger a correction and what the administrator is allowed to edit and add to the vocabulary. "We have a lot of creative users. Thanks to them, the vocabulary is growing. But it isn't just our colleagues who are creative and put our IT to the test," smiles Dr. Keller. "When one of our users spoke the term 'Kleinhirnhemisphären', the speech recognition system didn't understand at first and proposed 'kleine Hemisphären'."

But it isn't just in terms of speech recognition where the RIS is flexible. The physicians and staff work at different sites. They stand in for and help each other out when specialised knowledge is required. From any workstation they can access their own individual user

profile, which is managed in the medavis RIS. The system runs on a central server. A 45 Mbit/s connection ensures quick response times, despite central installation. The advantage of working like this is that the features of the RIS, such as group worklists, are used intensively. "Colleagues interpret images for other colleagues if they have time. We do this in cases where the patient is not looked after by someone from our imaging center, but by a colleague at the clinic. And reporting from a central worklist also saves us time in the context of working with referring physicians," says Dr. Keller.

According to Dr. Keller, these functions of the RIS are used so intensively because it is so easy to customise the system. The RIS is so flexible it can be adapted to individual workflows and requirements. Which is why there are rarely any support queries from users. Minor issues can be handled by Dr. Keller himself, and for anything more technical he can easily turn to the staff at medavis. "It's nice to have access to such a competent team on the vendor's side," he smiles.

Greater Success together

"My colleagues and staff also value the medavis RIS because it is so stable and never lets them down. Interfaces to other systems and modalities are also seamless." Thanks to the synergies created by the partnership, speech recognition could also be integrated without a hitch. All expectations were met, despite Dr. Keller's initial skepticism. "Given the huge impact of speech recognition on the familiar workflow, I was concerned that not everyone would be compliant. I was positively surprised. The training was good and everyone embraced the change. The biggest 'objector' initially now helps me out with the skeptics," smiles Dr. Keller.

Buoyed by the success among colleagues in-house, Dr. Keller now has his sights set on the referring physicians for 2015. His intention is to create a joint, digital time and appointment management system, and he is optimistic: "What has worked well with the RIS internally will also work with our external colleagues."

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