



Danish hospital increases overall productivity by 5-7%

Hospital-wide speech recognition leads to cost savings and lean workflow

Customer story

Vejle County Hospital is one of six Danish county hospitals and the main hospital of the County of Vejle, serving 22,000 inpatients and 194,000 outpatients every year. Vejle County Hospital started optimizing diagnosis procedures by using an electronic patient record (EPR) as early as 1997. Several years ago, the hospital integrated the speech technology Philips SpeechMagic in the EPR, which is used by 1,400 physicians, nurses and secretaries. The integration of SpeechMagic has led to higher-quality health records, increased patient satisfaction and improved productivity throughout the hospital.



“Speech recognition has become a key technology in our hospital’s IT strategy.”

Kenneth Seerup-Jørgensen,
IT Manager

In January 2003, Max Manus, Philips’ partner specialized in speech processing solutions, first installed SpeechMagic in the hospital’s orthopaedic and surgical departments. A year later, the system was gradually implemented in other departments and the implementation across all departments was completed in September 2006. The hospital has not only benefited from cost savings of several million Danish krone but has also achieved faster and smoother internal communication; time savings regarding the transfer of patients from one department to the other and change of shifts; and more exciting and versatile secretarial jobs. Taking advantage of digital technology, Vejle County Hospital has created a lean workflow and has become a role model for other hospitals on an international level.

High-quality treatment and patient safety

Chief Executive Officer Per Askholm Madsen recalls how his interest in speech recognition was sparked many years ago: “I was head of IT at another hospital when I read a report from the US which showed that physicians spend only 40% of their time with their patients and more than half on searching and transferring data. I was convinced that speech recognition technology has the potential to turn this ratio around.” Per Askholm Madsen developed a vision on applying medical IT: “At Vejle County Hospital, we’re taking the lead in utilizing advanced computer technology and know-how to secure well-planned and careful treatment of all patients.

When we integrated SpeechMagic in our electronic patient record, it soon became evident that speech recognition technology is a perfect fit for our IT strategy. SpeechMagic has helped our physicians give more attention and better treatment to their patients and that was exactly what we had been striving for.”

“During the last few years we have introduced such advanced technology as the electronic patient record as well as several other medical IT applications,” adds Kenneth Seerup-Jørgensen, IT & Administration Director at Vejle County Hospital. “Speech recognition has become a key technology in our hospital’s IT strategy.” SpeechMagic now runs in the departments of orthopaedic surgery, organ surgery, neurology, radiology, pathology, clinical genetics, anaesthesiology, onthology and oncology.

Once a physician has dictated a medical record, they will immediately be able to edit the text produced by SpeechMagic. Since the clinicians started reviewing their own dictations the accuracy of medical reports has risen. Per Askholm Madsen explains how speech recognition increases patient safety: “The data is instantly available and does not perish in a pile of records on the clinician’s desk. Every patient’s record is available to all staff, immediately after the physician has finished their treatment.”





"The implementation of speech recognition has been our most profitable IT project ever."

Per Askholm Madsen,
Chief Executive Officer



"Now the records are always there on time, and staff can access the details whenever needed."

Sten Larsen,
Assistant Medical Director

Learning points

Clinicians at Vejle County Hospital now spend some more time on their patient records because they are obliged to review and verify their own dictations and transcriptions. On the other hand, they also save some time as they no longer need to answer questions from the transcriptionists and all dictated material is automatically added to the patient record.

"Many hospitals will not gain anything by implementing speech recognition if they don't look into how their clinicians work," says Per Askholm Madsen. "We first gained insight into how the various departments work and then linked what we knew about the clinicians' way of working to the transcriptionists' tasks." Assistant Medical Director Sten Larsen adds: "It's virtually impossible to make physicians spend more time on creating their own electronic patient records without using speech recognition. They have not been educated to produce texts, they will not be very good at it and they may simply resist the implementation of a tool like the EPR. But when speech recognition has been integrated into the EPR they will soon see the benefits for their daily work and for their patients."

Faster internal communication

Speech recognition has led to resource savings, faster and smoother internal communications and considerable time savings regarding the transfer of patients from one department to another.

At a change of working shifts, the physicians do not have to pass on as much information as before, since all the reports have already been completed. "We used to go through what had been done with specific patients, e.g. during a weekend where no reports were written," recalls Sten Larsen. "Now the records are always there on time, and staff can access the details whenever needed."

"The main reason for introducing speech recognition was to speed up the administrative processes, making them keep up with the clinical procedures," explains Per Askholm Madsen. "In the last few years, we have saved several million Danish krone. Since the introduction of SpeechMagic the overall productivity throughout the hospital's departments has risen by 5-7%."

Exciting secretarial jobs

On top of the patient benefits and the financial outcome, the implementation of speech recognition has also created more versatile jobs for the hospital's secretaries. Some transcriptionists left before the implementation of SpeechMagic because they believed they would lose their jobs. "We have not dismissed a single secretary," states the CEO. "We believe that our secretaries are skilled people and very capable of fulfilling other tasks than typing with earplugs in their ears." The remaining transcriptionists have become administration supporters, quality assistants, IT assistants or register specialists in charge of registering diagnoses. Vejle County Hospital has offered its secretaries courses specifically for their new tasks and more than 50% have expressed that their new jobs are far more exciting than their transcription duties. Besides, the number of secretary trainees has risen since the hospital has implemented speech recognition. Now Vejle County Hospital employs almost twice as many trainees because they are eager to find out more about this new high-tech workplace.

"IT projects are often constrained by structural and financial issues and I am impressed that our speech recognition project has survived," concludes Per Askholm Madsen. "There has only been a minor deviation from our forecast. For our hospital, the introduction of SpeechMagic has been the most profitable IT project ever."