

Consolidated Radiology Complex

A Crescendo Case Study



High tech in the shade of the palms: Puerto Rican radiology institute speeds up reporting by 40% using speech recognition



Puerto Rico's Consolidated Radiology Complex (CRC) in the city of Caguas is one of the first on the island to implement speech recognition for report creation. The facility, which transcribes some 28,000 lines per month, thus reduced its

report turnaround time by 30-40%, resulting in a more efficient provision of care. The rising number of consultations, which triggered a 40% increase in dictation volume between 2005 and 2006, can be managed without hiring additional transcription resources – thanks to significantly improved working conditions for transcriptionists.

Puerto Rico is the easternmost island of the Greater Antilles, located in the Caribbean Sea. Discovered in 1493 by Christopher Columbus, the island became an unincorporated territory of the USA in 1898. In 1917, the U.S. Congress granted Puerto Ricans American citizenship. Today, Puerto Rico has a population of 3.6 million - the great majority of which are US citizens.

The health reforms of 1993 led to the privatization of public facilities, with the government financing a medical insurance program contracted to the private sector. By late 2000, all municipalities had been incorporated into the health reform plan, with 99% insured and 1.8 million participants in the Government of Puerto Rico health insurance plan. Puerto Rico's current healthcare system has around 13 public and 45 private hospitals with a total of more than 12,000 beds. Specialized institutions act as service providers to hospitals and general practitioners; one of them being the Consolidated Radiology Complex serving the southern and northeastern areas of the island.

Radiology consultations in particular are critical to diagnostics and treatments and many hospitals and GPs depend on the fast delivery of the results to be able to continue treatment. Amazingly, time is often wasted dealing with administration – with long waiting times between the dictation of the report by the radiologist and the transcription of the report by the transcription team. Reasons for the transcription bottleneck vary from cost restrictions to the difficulty of finding good medical transcriptionists. In this respect, the situation in Puerto Rico is very similar to that in mainland USA.

CRC's president, Dr. Jorge Haddock, decided to make a difference by implementing speech recognition in order to solve both of the aforementioned issues: to reduce the costs associated with transcribing medical reports and increase the productivity of the transcriptionist in an attempt to facilitate faster diagnosis and medical reporting.

IDENTIFYING IMPROVEMENT POTENTIAL

CRC had been using the digital dictation system from Canada-based Crescendo Systems Corporation. According to Marirosi Martinez, CRC's transcription manager, digital dictation has been a relief, but falls somewhat short in handling the increasing number of patients. They either had to invest in new transcription staff, accept long waiting times for reports or outsource more work to external service providers. "Outsourcing is an option, but there are quality and confidentiality issues which, in the end, prevented us from resorting to additional outsourcing services," Marirosi explains.

Another option was speech recognition, which would provide the transcriptionists with a transcribed draft of the dictation, so that they only had to correct it. In September 2005, after an extensive evaluation period, Marirosi and her team decided to add speech recognition to their digital dictation solution. Crescendo's system is powered by the SpeechMagic speech recognition technology from Philips, supporting network-based architecture, interfacing with other healthcare applications and providing a specialized recognition vocabulary (ConText) for radiology. Because the six radiologists at CRC dictate their reports in English, the US Radiology ConText has been implemented.



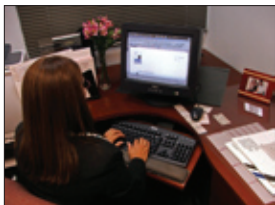
"I really benefit from the time saved through speech recognition," Marirosi expresses. "Managing the team has become easier and more effective, as stress levels have been reduced and the quality of the reports has improved."

Marirosi Martinez, Transcription Manager

COMPLETING THE SOLUTION

CRC has installed various software modules in order to implement a customized dictation and transcription solution. Radiologists use **DigiDictate-IP**, a customizable dictation interface that allows them to dictate directly into their PCs in real time. **DigiDictate-IP** operates through the Crescendo Wide Area Service (CWAS) server, a gateway to the centralized system that ensures secure data access and allows for real-time dictation and workflow management. Once a dictation is completed, iRouter intelligently routes the dictation to either the

SpeechMagic server, or directly to the transcriptionist, depending on the preferences set. "This flexibility is critical, as some radiologists do not dictate regularly, which is why SpeechMagic can't adapt to their dictation style. Their dictations are therefore routed directly to the transcriptionist for conventional transcription," Marirosi explains.



Transcriptionists use **MedRite-XL**, providing them with advanced transcription features such as QuickKeys, designed to reduce the amount of keystrokes, and the automatic retrieval of templates. There are six different work type categories: CT Scan, MRI, X-Ray, Mammography, Sonography and Bone

Densitometry. Transcriptionists type the specific code configured for each work type in order to pull up the corresponding template, which includes the font type and size, CRC's logo and the patient's information. Working as a team, transcriptionists share a common job list. Although each transcriptionist is assigned a certain work type, they are able to help each other out in the case of backlogs, vacation or sickness.

Finally, MD Center-XL is an integrated application that allows radiologists to read and sign off the final report on the network.

To record a dictation, radiologists use the Philips SpeechMike with integrated Barcode Scanner. Thus they can easily retrieve the work type and patient ID number from the patient record by scanning the barcode label. The barcode label is generated by the receptionist prior to the consultation. "The SpeechMike device is very comfortable and doctors just love it, although in the beginning it was difficult to convince them to change," said Marirosi.

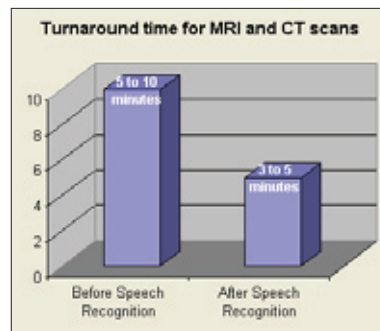
COMMUNICATION IS EVERYTHING

In fact, change management is one of the key factors when it comes to implementing speech recognition. Marirosi noted that many people are resistant to change, and is convinced that open communication is the key to reducing any anxieties related to the introduction of new technologies.

"Prepare everyone who is to be involved in the process. Prepare the transcriptionist; distribute all the information you have. Talk to the doctors, administrators – tell them what they will find and what they won't find in the new system," she recommends. "And above all, define exactly what you expect from the system for now and for the future."

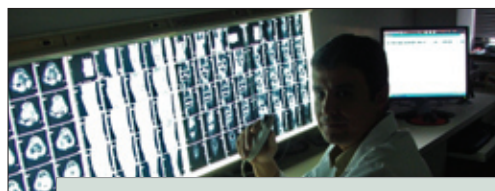
Crescendo took CRC's requirements into account and Marirosi is highly satisfied with the way they were implemented. "Crescendo's service is excellent," she says. The geographical distance from Puerto Rico to Canada, where Crescendo is based, is no problem, as Crescendo engineers can remotely log in and administer CRC's system. However, when the system went live, IT engineers from

Crescendo were onsite to ensure a smooth transition. "No matter how good the preparation is, you will always find things that are different from what you expected. Solve them as early as you can. Don't wait; it will cause you a lot of trouble and cost you a lot of money," advises Marirosi. Thanks to the fast and professional service received, CRC now has an "excellent" speech recognition system, something on which the facility can build for the future: "We are already looking into ways of interfacing the report creation system with the Radiology Information Systems," says Marirosi. This will further speed up radiology reporting, as the patient data will automatically be included in the dictation.



CRC is on the right track and now has a reporting system that complies with international standards. Report turnaround time has been reduced. MRI and CT scans, which generate long reports, are now available within 3 to 5 minutes, compared with 5 to 10 minutes previously. This reduces the waiting times for patients and referring physicians alike, as well as the costs associated with medical transcription.

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THE CRESCENDO PLATFORM

- DigiScribe-XL Dictation
- Crescendo Speech Processing powered by SpeechMagic
- MedRite-XL Transcription
- MedRouter Workflow Management & Distribution
- MD Center-XL Signature
- Crescendo Wide Area Service IP Gateway

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