

## **Outsourced Radiologists Do Better Reading for Fewer Hospitals**

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Experience working for a particular hospital matters when it comes to the performance of radiologists who work for outsourcing teleradiology companies, according to a recent study.

"More than half of all hospitals now use teleradiology services," said Jonathan Clark, assistant professor of health policy and administration, Penn State University. "Hospitals send their X-rays, CT scans, MRIs and other images to outsourcing companies who then forward the images to individual radiologists. Over the course of time, these radiologists gain a tremendous amount of experience by reading images from hundreds, or in some cases thousands, of customers."

But is the experience gained by reading images for so many hospitals the same as the experience gained by repeatedly reading images for just a few hospitals?

"There is debate out there about whether or not we should be outsourcing this kind of work," Clark said. "Some say that one CT is the same as another, so it doesn't really matter if the CT is coming from Hospital A or Hospital B; what matters is that the person reading the image has the right training and experience. The other side of the debate says that radiological images are not commodities and that the process is more nuanced than simply exchanging bits of information over the information super highway. From this perspective a radiologist's performance will improve as he or she learns the nuances of reading images from a particular hospital."

To find out whether learning and performance improvement are customer specific, the researchers, who included Clark, Robert Huckman of the Harvard Business School and Bradley Staats of the University of North Carolina at Chapel Hill, examined the experience and productivity of 97 radiologists reading more than 2.7 million images from 1,431 hospitals.

"By estimating learning curves, we were able to determine the extent to which a radiologist's productivity reading an image for hospital A was a function of his or her prior experience reading for hospital A, versus his or her prior experience reading the same image for other hospitals," Clark said.

The team found that the radiologist's prior experience with an ordering customer has a greater effect on performance than his or her overall experience reading the same type of image for other customers.

"Somebody might look at that finding and say either what we should have is outsourcing radiologists who read for only a few customers or we shouldn't have outsourcing at all," Clark said, "because if you're going to focus a radiologist on one or two customers, then you might as well make the argument that you should have him or her work as an employee for that customer."

The researchers also found that the customer-specific knowledge gained by individual radiologists is aided by the variety of customers with whom a radiologist has experience.

"How can it be that both specialisation and variety are important?" Clark said. "Our models can only take us so far toward answering this question, but we think the implication is that there are limits to both customer specialisation and customer variety, and that the optimum is to have a nice mix of both specialised experience and variety in customers."

In addition, Clark, Huckman and Staats found that the customer specificity of learning diminished as the outsourcing company gained more experience with a particular customer.

"The implication is that customer-specific capabilities may also be built at the level of the outsourcing organization as a whole and not just at the level of the individual radiologist," Clark said. "Overall, this finding suggests that while there is customer specificity to learning for outsourcing radiologists, the implication is not that we shouldn't outsource. Rather, our findings provide guidance to outsourcers in terms of how they might think about designing the work of their radiologists to maximise productivity. For new customers, an outsourcing firm may wish to keep individual providers relatively more focused on serving a specific customer. As organizational experience accrues with a specific customer, however, such dedication becomes less critical."

The results of the study (Learning from Customers: Individual and Organizational Effects in Outsourced Radiological Services) appeared online on Dec. 20, 2012, in the journal [Organization Science](#).

"Our findings may be particularly important, given the growing use of telemedicine and the uncertainty associated with delivering health care in a virtual way. In the setting we studied, teleradiologists are often reading emergency cases, where speed and productivity can be critical, so it is important for outsourcing radiology firms to understand how they might design their operations to improve performance and ensure a rapid response for each customer."

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