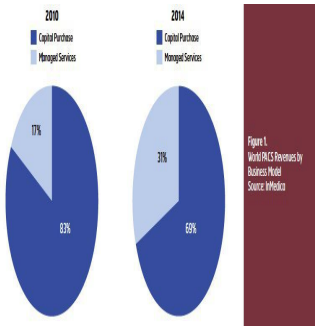
Volume 14, Issue 2/2012 - Cover Story

Outsourcing and Information Technology



With decreasing healthcare reimbursement and increasing economic uncertainty, there is a growing trend for hospitals to opt for a zero capital expen- diture, managed service model with the purchase of IT systems in healthcare. As the application of managed service models emerges in the PACS market, it paves the way for cloud technology to finally have a significant impact in medical imaging.

Managed services refer to a model where the vendor owns the IT infrastructure, with the hospital paying a fixed fee per month based on projected examination volumes. The vendor is also fully responsible for maintaining this infrastructure, providing data storage and software on a subscription basis. The benefits of managed services include reducing the need for heavy capital investment in PACS, such as costly inhouse IT support staff and IT infrastructure investment. It also provides regular access to the latest software upgrades and allows flexible storage capacity to suit end-user's needs.

In any managed service model, the underlying factor is the pay-per-service and third-party hosting or ownership of PACS. There are then different forms of managed services depending on the server location of the two components of PACS - software and storage (see table 1).

Cloud storage refers to the storage of the client's data resting with the vendor or third party. However, PACS incorporates a viewing component (software), as well as the storage of images; the viewing system is actually what many consider as PACS. Hence, the question is, at which point does one begin to class PACS as being cloud-based?

- Is it the moment the software is at a third-party server, as in SaaS onsite?;
- Is it when the storage is remotely available on the third-party server, as in hosted managed services?, or
- Is it only when both software and storage components are hosted by the third party, whereby the software as a service lies off-site?

Companies offering cloud-based PACS tend to fall into one of these three categories. It therefore depends on whether the system being offered is considered cloud-based from a software or storage point of view. A pure cloud-based PACS may be described as a system where both software and storage components are vendor-hosted.

More important than definitions, of course, is the adoption of this technology. Both the technology and the business model have to work for suppliers and end-users. On the technology side, one might be more confident that vendors will resolve the technical hurdles, such as the quality of the data when transferred between locations and servers, as well as the quality of the interfacing. On the business model side, however, confidence is much lower and many questions remain. These include:

- Will hospitals be completely comfortable with third-party hosting of patient data, regardless of regulatory compliance?
- Will patients be comfortable with this arrangement?
- What about the cost-savings? Is the total cost of ownership over a product's lifecycle significantly different from traditional PACS models?
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The major draw for managed service models are their stated cost benefits. Once the return on investment is clearly established penetration of this remote storage model will increase and there will be strong demand for further technological advances in the field. This phenomenon is already taking place in the UK and the Netherlands, for example, where remote managed service models currently account for most managed service installations being currently provided. However, now that the cost savings from vendor ownership and management of PACS have been realised in these countries, the next wave of demand is for further cost savings, which may be obtained by completely moving storage and/or software to the vendor's site. Indeed, as the UK renews its national PACS programme in 2013, InMedica forecasts that up to 20 percent of revenues will derive from hosted managed models, where the storage of images is cloud-based.

As such, vendor-hosted PACS and cloud technology in healthcare will emerge strongly by proving an ability to reduce the cost of ownership to the end user. Despite any technological benefits that cloud technology may provide in medical imaging, what hospitals need to see, and what

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suppliers need to work on, is an enhanced return on investment.

Published on : Mon, 27 Aug 2012

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