

# IS PACS A COMMODITY?

Critical issues your vendor has to resolve

At this stage, PACS has been around for quite some time. It would seem natural that the capabilities of PACS would have matured to become the norm in terms of necessary requirements and that all PACS out there would meet the most prioritized needs. However, this is not the case.

Although most PACS meet the requirements as they were ten years ago, the reality is that the world of radiology has changed dramatically and many PACS have not yet been fundamentally redesigned in line with this. It may be surprising that so many systems are rapidly becoming outdated, but there is a straightforward explanation. A PACS vendor does need a lot of courage and financial stability to be able to make the leap into a new generation no matter how much proof there is that the current generation is a dead end.

Based on Sectra's understanding of key challenges facing the industry and our 20 years of experience in the PACS business, this white paper describes three major issues that are greater than ever before, all at the core of diagnostic imaging:

- Handling the data boom
- Approach wide area radiology
- Supporting continuous improvement



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# HANDLING THE DATA BOOM

## There's a sea of data – navigate it, don't try to swallow it

The first wave of the data boom was the multi-slice CT. The diagnostic possibilities increased dramatically and entailed many routine examinations having thousands of slices. Although we have not yet seen the full extent of this first wave, the next one is already here: dual energy CT. The two Hounsfield values of every pixel will add to the data set sizes, but an even greater effect comes from the increasing number of high-resolution scans thanks to short scan times and low dose. Also in other areas, such as PET/CT and MR, the new diagnostic possibilities are driving the data boom.

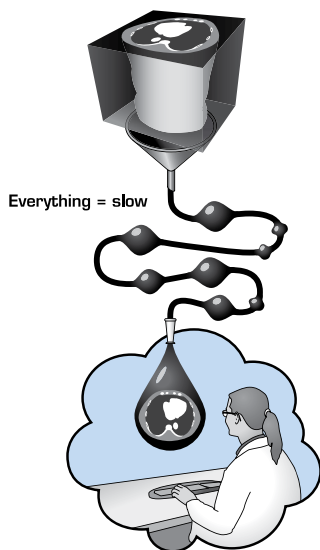
As for many other parts of society, the main challenge for a radiologist today is the information overflow. There are gigabytes of data in each image and the bandwidth to the human brain is simply not enough. It is impossible to swallow this sea of data if reading productivity is to be anywhere near what it needs to be. Instead, the task of the radiologist is becoming that of navigating the sea of data as efficiently as possible to find the diagnostically relevant information.

The PACS needs to be equipped to deal with this new situation. Some years back it made sense to build a PACS on the notion of images being individual slices and that a radiologist would scroll through stacks slice by slice – a “swallow” approach. Any PACS that claims to be a sustainable solution must have a “navigate” approach. The user should be able to view the data in any resolution, in any projection and with any visualization technique. In order to achieve sufficient performance, the architecture has to be built for this completely free image data access.

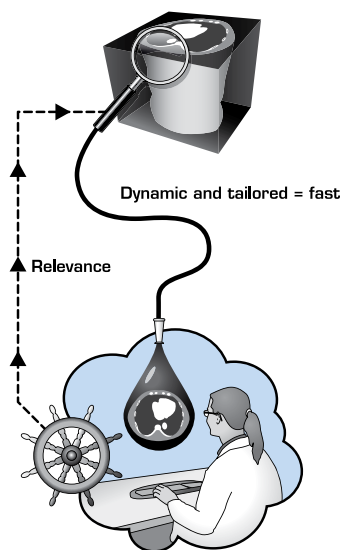


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“Swallow approach”



“Navigate approach”



# APPROACH WIDE AREA RADIOLOGY

## The self-sufficient radiology clinic is a notion of the past

Economic pressure and the scarcity of radiologists make collaboration across boundaries a necessity from a productivity perspective. There are geographical boundaries to cross – such as when the available radiologist with the right competence is in another part of the country; organizational boundaries – such as when you want your remote clinic to reach the same system performance as the central site; enterprise boundaries – such as when you want to share the patient history asset across enterprises to benefit patient care.

You need a PACS partner that can show you the important crossroads of wide area radiology and help you make the decision that is right for you. Then, of course, you want a partner that can also provide the technology to resolve your specific situation. The data boom challenge becomes even more pertinent in the wide area radiology scenario.

Distributed or centralized storage is one of these crossroads, valid both within an enterprise and between enterprises. The optimal solution is highly dependent on your priorities, whether the top item on your list is large-scale benefits of the storage hardware, maximizing reading efficiency, avoiding data inconsistency between duplicates, or something else.

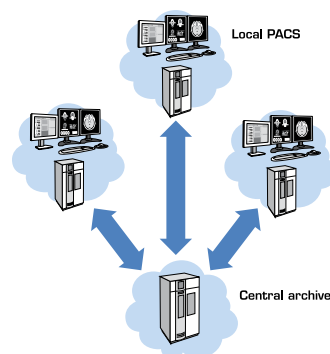
Another issue is the distinction between archiving and sharing. An archive is, in the PACS context, a long-term storage of images, typically in the DICOM file format. However, archiving is not enough to manage the clinical workflow of sharing full patient history across units and enterprises. Whereas archiving deals with images only, a sharing solution handles the full RIS and PACS data, including reports and clinical documents. You should ask for a sharing solution with a unified user experience, where all shared data is accessed as if it were a single local system.

Another major difference is that in an archive, what was once stored is exactly what can be retrieved. In other words, there is no consistency check in relation to the original provider and there is no straightforward way to deal with alterations to images or patient information in the cross-enterprise scenario. A proper sharing solution, on the other hand, provides the possibility of letting the shared images remain with the provider. Using this approach, duplication and consistency issues are non-existent. Despite the clear distinction, the differences between archiving and sharing are overlooked by many medical IT vendors. For instance, the suggestion may be made to use an archive to resolve a sharing need. The typical solution then becomes band-aiding the archive with a hotchpotch of integrations that is neither cost-effective in the long term nor future-proof. You should make sure that your vendor supports state-of-the-art, clinically apt standards for sharing, such as IHE XDS-I.



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Cross-enterprise archiving



Cross-enterprise sharing without duplicates

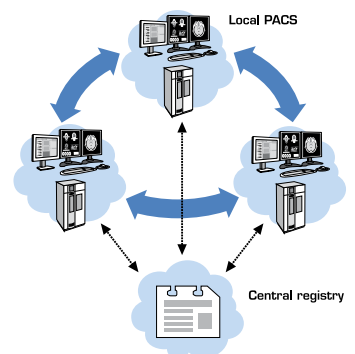


Image data traffic  
Lightweight query traffic

# SUPPORTING CONTINUOUS IMPROVEMENT

## **Continuous improvement - the route to the productivity peak**

Hopefully, the PACS solution that you select will truly have the potential to meet your needs. But it is important to realize that buying and deploying the system is just the beginning. For state-of-the-art PACS, the greatest potential for productivity increase lies in enabling users to fully exploit the capacity of the system. An initial training session is never enough. You need experience of working with the system to be able to put the right questions about how to reach the individual pinnacle of productivity. There is also enormous potential in streamlining the workflow of the entire unit if you have a powerful and versatile PACS.

Make no mistake; it is a great challenge to achieve all this. For one thing, taking time away radiologists' production for training activities is always a hard sell, even if the long-term benefits are clear. Regarding workflow tuning, it is important to realize that best practices need to be adapted to each site.

Many PACS vendors simply do not have the experience or the organization to truly support continuous improvement. Make sure to demand continuous assistance in spotting inefficient procedures, exploring all capabilities and spreading best practices. You should be able to select the best approach for you from a smorgasbord of services offered, ranging from off-site classes, application specialists recurrently on site, complete and easily accessible help files, user group meetings, and more.



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## **Selecting your partner**

The conclusion is clear: PACS is far from a commodity. You should look for a vendor that provides a solid solution to all the above challenges. Beyond marketing buzz, it is possible to evaluate a PACS vendor by looking at the track record of working solutions in the field. The track record also indicates the future for the company; since the PACS is a mission-critical system, you need a vendor that is going to be around as long as you are.

## ABOUT SECTRA

Sectra provides industry-leading RIS/PACS, mammography and orthopaedic solutions. We are committed to transforming your needs into efficient medical imaging solutions. With more than 20 years of leading innovation, Sectra maintains its position at the forefront of medical IT development thanks to close cooperation with top research centers and more than 1,000 customers. This is how we provide the solutions you need, today and tomorrow. For more information about Sectra's radiology solutions please visit [sectra.com/medical](http://sectra.com/medical).

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